TECHNICAL REPORT

ON THE

MAIDEN MINERAL RESOURCE ESTIMATE FOR THE PCH PROJECT, STATE OF GOIÀS, BRAZIL

SIRGAS 2000 UTM Zone 22S, 485,507 m E; 8,204,215 m N
LATITUDE 16° 14’ S, LONGITUDE 51° 08’ W

Prepared for:

Appia Rare Earths & Uranium Corp.
Suite 500 – 2 Toronto St.
Toronto, Ontario, Canada, M5C 2B6

Report Date: April 15, 2024
Effective Date: February 1, 2024

Qualified Persons	Company
Yann Camus, P.Eng.	SGS Geological Services (“SGS”)
Marc-Antoine Laporte, P.Geo., M.Sc.	SGS Geological Services (“SGS”)
Sarah Dean, P.Geo.	SGS Geological Services (“SGS”)

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1 SUMMARY

SGS Geological Services Inc. (“SGS”) was contracted by Appia Rare Earths & Uranium Corp., (“Appia” or the "Company") to complete an Mineral Resource Estimate (“MRE”) for its Ionic Adsorption Clay (IAC) project located in the State of Goiàs, Brasil, also known as the Cachoeirinha project or the PCH Project (“PCH” or “Project”), and to prepare a National Instrument 43-101 ("NI 43-101") Technical Report written in support of the MRE.

Appia is a publicly traded Canadian company in the rare earth element and uranium sectors. On March 7, 2023, Appia formalized its commitment by signing an earn-in agreement to acquire up to a 70% interest in the Project (see details in chapter 4.3 of this report).

Appia is a Canadian mineral exploration company listed on the Canadian Securities Exchange under the trading symbol “API”, and in the USA the shares trade on the OTCQB platform as OTCQB ”APAAF”. In Germany the shares trade under the symbols A0I.F, A0I.MU and A0I.BE.

The Authors of this report are independent Qualified Persons as defined by NI 43-101. The MRE presented in this report was estimated by Camus.

The reporting of the MRE complies with all disclosure requirements for Mineral Resources set out in the NI 43-101 Standards of Disclosure for Mineral Projects. The classification of the MRE is consistent with the 2014 Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Definition Standards (2014 CIM Definitions) and adhere as best as possible to the 2019 CIM Estimation of Mineral Resources & Mineral Reserves Best Practice Guidelines (2019 CIM Guidelines).

In preparing the current MRE and the current technical report, the Authors utilized a digital database, provided to the Author by Appia, and technical reports provided by Appia. All background information regarding the Property has been sourced from previous technical reports and revised or updated as required.

1.1 Property Description

The PCH project is located in Goiás state, Brazil, approximately 216 km by GO-060 from Goiânia, the state capital, and 410 km from Brasilia, the capital of Brazil (Figure 1-1). The property is located approximately 30 km from Iporá, a mid-size city of approximately 31,500 population (2018 census). Access to the property from Iporá is excellent by regional roads, with a mix of hard surface and gravel surface roads. Within the property boundaries, a network of gravel surface rural and unsurfaced farm roads provides excellent access.

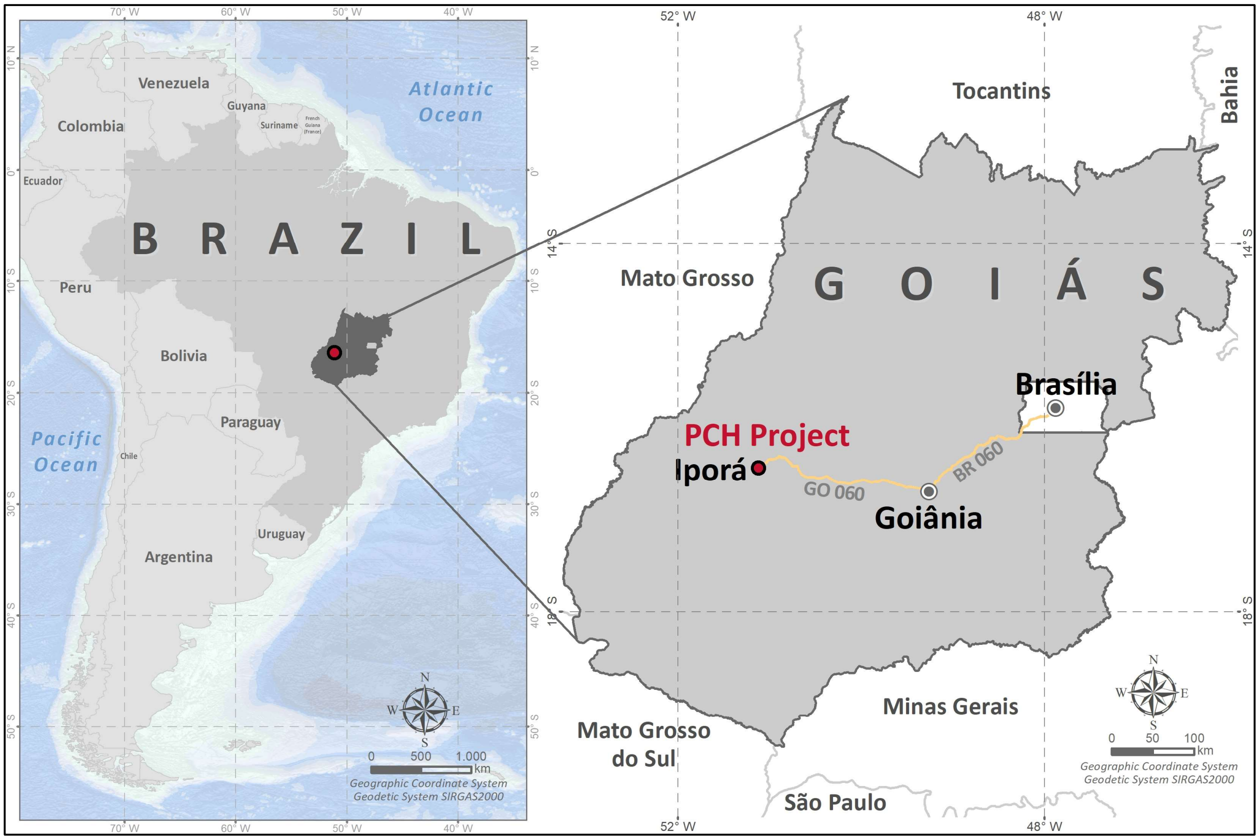
The PCH property surrounds tenements held by Vale and Dundee Precious Metals in the central area of the tenement package, as well as tenements held by Atlas Litio in the northwest of the overall PCH tenement holdings. The Vale and Dundee tenements are associated with a significant ultramafic complex comprised of dunite and peridotite which is the focus of nickel exploration.

The PCH Ionic Adsorption Clay REE project boasts 22 claims over a total area of 40,963.18 hectares, strategically located within a prime mineralization zone. The map of claims is shown in Figure 1-2.

The Property is accessed from Iporá is ideal through a well-developed network of regional roads. These roads offer a blend of hard and gravel surfaces, ensuring smooth and reliable transportation. Within the property boundaries, exists a well-maintained network of gravel-surfaced rural roads and unsurfaced farm roads that provide project accessibility.

The vegetation in the area is represented by fields, savannas, and gallery forests. The “cerrado” is the corresponding biome of the mapped area, characterized by the occurrence of grasses, shrubs, and spaced trees, such trees have thick bark, crooked trunks, and roots deep. Currently, the vegetation is replaced by pastures planted in extensive areas. An anthropogenic area with intense livestock activity, razed relief with some elevations highlighted in the relief.

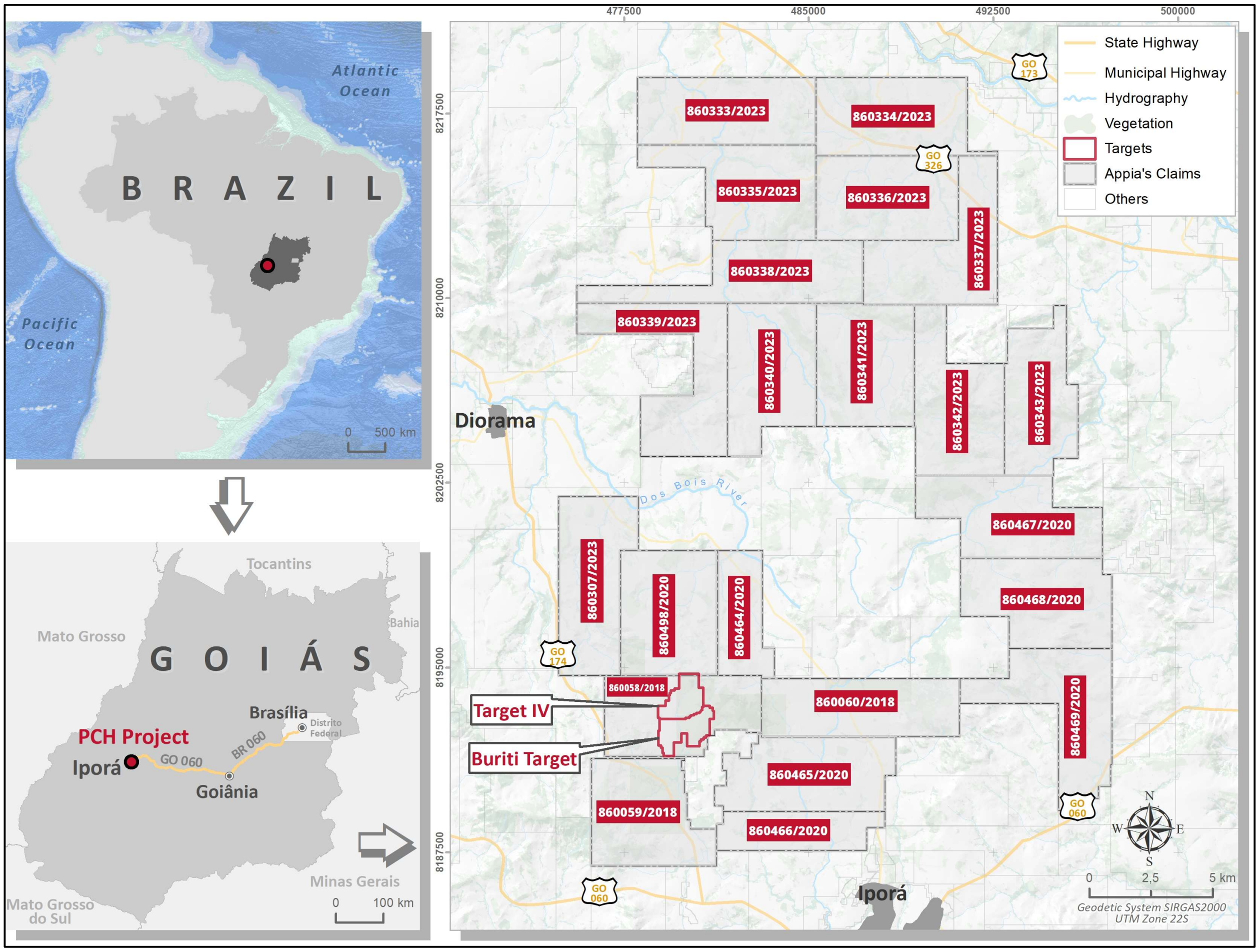
Figure 1-1 Location of the PCH Project



Mr. Marc-Antoine Laporte visited the Project site on November 9 to 12, 2023. During the site visit, Mr. Laporte conducted a general review of the logging and QA/QC procedures in place for the 2022-2023 drill program. Drill hole collars were visited, and selected collar positions checked with a hand-held global positioning system (GPS) instrument. An inspection of the drilling equipment and deviation survey methodology and tools was completed.

All units of measurement used in this technical report are in metric. All currency is in US dollars (US$), unless otherwise noted. All coordinates used in this report are in SIRGAS 2000 UTM Zone 22S, unless otherwise noted.

Figure 1-2 Map of Claims



1.2 History of Exploration, Drilling

The Exploration Permit Holder (EPL Holder) completed the following exploration work on the four target areas between 2019 and 2021:

- Generation of geophysical map products
- Geological mapping
- Geochemical surveys (including stream sediment, rock grab as well as diamond drilling, trenching and augering)
- Ground geophysical surveys
- Potential for mineralization investigated.

Four vertical diamond drill holes were drilled to investigate the source rocks of found geochemical anomalies Two drill holes intercepted the Granito Iporá host unit and drilled only up to 30 meters. Two drill holes intercepted the Fazenda Buriti Complex alkaline breccia, with fragments of pyroxenite and a matrix of syenitic composition containing hydrothermal alteration: these holes reaching up to 100 meters.

1.3 **Geology and Mineralization**

The geology of Brazil comprises a significant portion of very ancient carton basement rock from the Precambrian overlain by sedimentary rocks and intruded by igneous activity; all of which has been impacted by the rifting of the Atlantic Ocean. Much of the basement rock underlying Brazil formed during the Precambrian, including the São Francisco Craton which outcrops in Minas Gerais and Bahia. In the Mesoproterozoic, the Rio de la Plata craton (beneath southern Brazil), the Amazonia Craton and the small São Luis Craton and sections of the Congo Craton which form the basement rock were joined with Africa.

The PCH project is located within the Toncantins Structural Province in the Brasilia Fold Belt, which is part of the Goiás Magmatic Arc. The Tocantins Province is composed of a series of SSW-NNE trending terranes of mainly Proterozoic ages which stabilized in the Neoproterozoic in the final collision between the Amazon and São Francisco cratons. The Tocantins Province is divided into an eastern and western section. The eastern section is located in a N-S arc-shaped folded belt known as the Brasilia Folded Belt (BFB), which extends northwards to the state of Tocantins and southwards to the state of Minas Gerais. The Brasilia Fold Belt consists of a deformed mobile belt deposited during the Meso to Neoproterozoic in the western margin of the Sao Francisco Craton over a basement of Paleoproterozoic granitic-gneissic terrane affected by Mesoproterozoic deformation. The Serra Verde rare earth project is located at the northern end of the BFB, while the southern end is represented by the Araxa rare earth deposit. The PCH project lies approximately at the centre of the BFB on the western margin of the belt.

The Toncantins Province orogen was formed by the Brazilian/Pan-African cratonic collision, located in the central-north portion of Brazil between the Amazon, São Francisco, and Paranapanema cartons. The mobile folding belts part of the Toncantins Province is composed of supracrustal volcano-sedimentary rocks, granitic intrusions and subordinate basic-ultrabasic bodies. The Brasilia, Araguaia and Paraguay ranges are situated within this geotectonic domain, with the Brasilia Belt around a west edge of the São Francisco Craton oriented in a preferential north-south direction, and the Araguia and Paraguay belts bordering to the east and southwest of the Amazonian Craton.

The northern border of the Parana Basin in central Brazil was subject to a very active erosive scenario during the Upper Cretaceous period with the intrusion of alkaline magmatism in the area. Three geological provinces are located in the region: the Goiás Alkaline Province, the Alto Paranaiba Igneous Province and the Porixoréu Province. The PCH project is situated within the Goiás Alkaline Province.

The local geology of the property is best understood through discussion of the main lithostratigraphic units found on the property. These are:

- Ribeirão Santo Antônio Metagranite
- Iporá Granite
- Sedimentary rocks of the Paraná Basin
- Alkaline rocks of the Goiás Alkaline Province
- Surface alteration rocks
- Soils

Target IV of the PCH project has been subject to the most active exploration program, including geophysical surveys (radiometric, ground magnetics and aeromagnetics), geochemical sampling, auger drilling, diamond drilling and trenching. The northern half of the target is underlain by the Iporá Granite with carbonatite (phosphate intrusion) and detrital-alluvial cover, while the southern half is underlain by gabbros of the GAP with overlying detrital-alluvial cover. Sandstones of the Paraná Basin Formation are found in the southwest of the target area. The property map including the geology is presented in Figure 1-3.

The PCH project shows a regolith profile reminiscent of the rare earth ionic adsorption clay-style deposits.

Rare earth ionic adsorption clay-style deposits, often referred to as ion-adsorption or lateritic deposits, are a significant source of heavy rare earth elements (HREEs). These deposits are predominantly found in Southern China with some examples in southern hemisphere (Brazil, Africa).

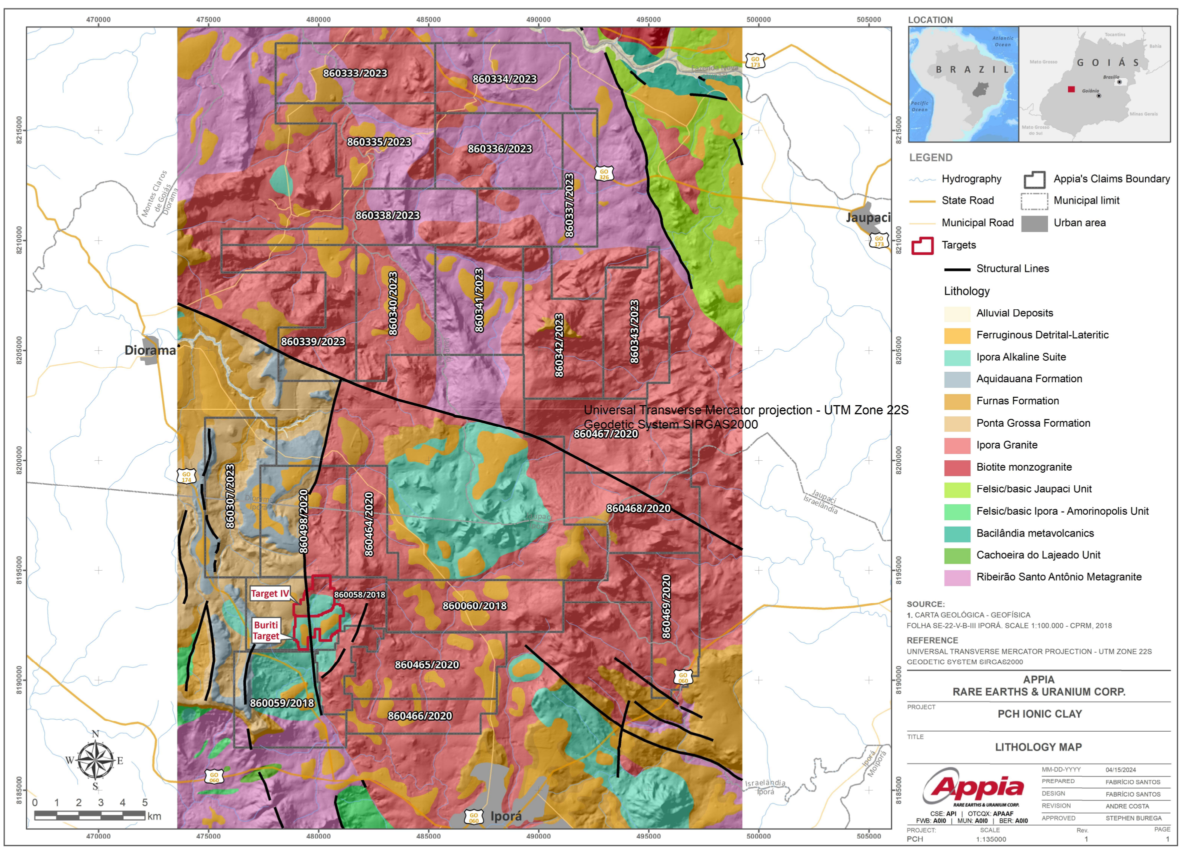
These deposits are formed through the intense weathering of granitic rocks, usually in subtropical climates where high rates of weathering can occur. The rare earth elements are leached from the parent rock and absorbed onto the surfaces of clay minerals within the soil. This adsorption is made possible by the highly ionic nature of these elements, which allows them to be readily taken up and held by the clay.

The clay in these deposits is typically a type of kaolin or laterite, both of which have the ability to adsorb large amounts of rare earth ions. The REEs are not incorporated into the crystal lattice of the minerals but are adsorbed onto the surface of the mineral particles. This makes them relatively easy to extract compared to other types of REE deposits.

Ionic clay-style deposits are especially important because they are rich in heavy rare earth elements (HREEs), which are more valuable and less abundant than the light rare earth elements (LREEs). These include elements like dysprosium and terbium, which are essential for many high-tech applications, including wind turbines, hybrid vehicles, and defense technologies.

The extraction from these deposits is typically done using heap leaching, a process where a chemical solution is used to dissolve the rare earth ions from the clay. While this method is relatively low-cost and less impactful than traditional mining methods, it can lead to significant environmental issues if not properly managed, such as water contamination and soil degradation.

Figure 1-3 PCH Property Geology (Excludes Recently Acquired Tenements)



Appia contracted Metro Cúbico Engenharia LTDAA to conduct a high-definition LiDAR and Orthophoto survey on the PCH Project from July 15, 2023, to September 21, 2023. The survey included laser profiling with the Matrice 350 RTK drone and Zenmuse Le, a high-precision IMU system and RGB camera with 4/3 CMOS and covered an area of 1,702.50 hectares.

Appia drilled a total of 3,255.8 meters in a total of 290 holes on the Property. A total of 243.5 meters was drilled in one diamond drill hole (PCH-DD-001). The diamond drill hole tested a strong magnetic anomaly at depth within the alkali breccia zone. A total of 993.3 meters was drilled in 142 Auger holes (PCH-AH-001 to PCH-AH-140 and PCH-AH-TT1 to PCH-AH-TT3). The Auger holes have a final depth of 2.0 to 13.0 meters. A total of 2,019.0 meters in 147 Reverse Circulation (RC) drill holes (PCH-RC-001 to PCH-RC-147). The RC holes were drilled vertically and have a final depth of 2 to 33 meters.

The weathered profile along the diamond drill hole PCH-DDH-001 extended to approximately 20 meters of true thickness yielding concentrations of 5,548 ppm or 0.55% Total Rare Earth Oxide (TREO), 1,420 ppm or 0.14% Magnet Rare Earth Oxide (MREO). The results confirm the ultra-high-grade nature of the upper levels, including concentrations reaching up to 22,339 ppm or 2.23% TREO, 6,204 ppm or 0.62% MREO, and 2,074 ppm or 0.21% Heavy Rare Earth Oxide (HREO) across 2 metres from a depth of 2 m to 4 m.

Two auger holes returned a total weighted average of 10,249 ppm or 1.02% TREO, including:

- PCH-AH-29 from 0 to 7m EOH: 4,122 ppm or 0.41% TREO, 1,066 ppm or 0.11% MREO, 361 ppm or 0.04% HREO, and 3,762 ppm or 0.38% Light Rare Earth Oxides (LREO).
- PCH-AH-30 from 0 to 7m EOH: 16,375 ppm or 1.64% TREO, 2,955 ppm or 0.30% MREO, 457 ppm or 0.05% HREO, and 15,918 ppm or 1.59% Light Rare Earth Oxides (LREO).

Drill hole PCH-RC-063 was sent for further analyses by SGS Geosol Labs, using method IMS95RS. The updated assays reveal a very significant 42.2% increase in Total Rare Earth Oxides (TREO) and a notable 9.2% increase in Magnet Rare Earth Oxides (MREO). Of particular significance is the high-grade 2 meter intercept from 10 m to 12 m, showing 92,758 ppm (Parts Per Million) or 9.28% TREO, with 13,798 ppm or 1.38% MREO, and 2,241 ppm or 0.22% Heavy Rare Earth Oxide (HREO), and 90,516 ppm or 9.05% Light Rare Earth Oxide (LREO).

1.4 Sample Quality Assurance / Control and Data Verification

All drill data collected by Appia during their 2023 drill programs included a comprehensive QAQC program including Standards (3), Blanks and Duplicates.

SGS reviewed the QAQC and all the RC laboratory certificates to find that the database was sound to support a resource estimate. No problem was detected that could cause any significant impact on the project.

1.5 Mineral Processing, Metallurgical Testing and Recovery Methods

Historical work has involved preliminary metallurgical test work and mineralogy studies at Actlabs and SGS Mineral Services in Canada and geometallurgical and flotation test work at the Federal University of Goiás ("UFG"). The work at UFG involved processing a sample of material from auger hole 8 from 9.25 m to 9.5 m depth. Sample material was dried, ground and screened to provide 7 size fractions.

La, Nd and Nb were successfully floated in the rougher tests, with recoveries of La and Nd typically averaging about 50% for the best collector conditions. Importantly, the flotation concentrates averaged 127 ppm Th and 38 ppm U, indicating radioactivity issues associated with mineral processing should be very manageable.

Current preliminary testwork indicates REE desorption from the matrix indicative of ionic clay REE mineralization. This work is ongoing and final results are pending.

It is anticipated extensive additional test work will be required to develop reliable data on the leachability of the clays. Based on the REE distribution in the regolith, it is recommended to do additional leaching assay to inquire the presence and recoverable grades of desorbed REE associated to ionic adsorption clay style deposits.

1.6 PCH Project Mineral Resource Estimate (MRE)

The block model representing the Current Resource of the PCH deposit is based on a total of 138 RC drillholes and 1 Diamond drillhole, which produced 1,869 samples in the 3 layers (Top Soil, Soil and Saprolite) above the rock. The 3 softer material layers were interpreted and modelled from this data.

The MRE is constrained within an optimized pit envelope using assumptions found in Table 14-7 of this report.

1.6.1 Mineral Resource Statement

The base case mineral resource estimation for the PCH project is presented in the Table 1-1. The open pit resource, at a base case cut-off grade of 10 US$/t NSR is estimated at 52.8 million tonnes (Mt) comprising 6.6 Mt Indicated resource with a grade of 2,513 parts per million (ppm) total rare earth oxide (TREO) and 46.2 Mt Inferred resource with a grade of 2,888 ppm TREO.

Table 1-1 PCH Mineral Resource Estimate (MRE)

Mineralized Zone	Classification	Volume	SG	Tonnes	TREO	MREO	HREO	Sm_2O_3	Tb_4O_7	Dy_2O_3	Pr_6O_{11}	Nd_2O_3	Sc_2O_3	Co
		Mm^3		Mt	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Target IV	Indicated	3.3	1.97	6.6	2513	562	186	58.3	5.8	31.1	109	358	15.9	22
	Inferred	6.9	1.96	13.5	7307	1391	331	114.4	9.6	49.4	311	907	24.6	74
Buriti	Inferred	16.7	1.96	32.7	1059	259	101	29.0	3.1	17.8	45	164	68.6	127
TOTAL	**Indicated**	**3.3**	**1.97**	**6.6**	**2513**	**562**	**186**	**58.3**	**5.8**	**31.1**	**109**	**358**	**15.9**	**22**
	Inferred	**23.6**	**1.96**	**46.2**	**2888**	**591**	**168**	**54.0**	**5.0**	**27.0**	**123**	**381**	**55.7**	**111**

1. The MRE has an effective date of the 1st of February 2024.
2. The Qualified Person for the MRE is Mr. Yann Camus, P.Eng., an employee of SGS.
3. The MRE provided in this table were estimated using current Canadian Institute of Mining, Metallurgy and Petroleum ("CIM") Standards on Mineral Resources and Reserves, Definitions and Guidelines.
4. Mineral Resources that are not Mineral Reserves have not demonstrated economic viability. Additional drilling will be required to convert Inferred and Indicated Mineral Resources to Measured Mineral Resources. There is no certainty that any part of a Mineral Resource will ever be converted into Reserves.
5. All analyses used for the MRE were performed by SGS GEOSOL by ICM40B: Multi Acid Digestion / ICP OES – ICP MS and by IMS95R: Lithium Metaborate Fusion / ICP-MS.
6. MRE are stated at a cut-off total NSR value of 10 US$/t. The full price list and recovery used to estimate the NSR is in Table 14-7. The estimated basket price of TREO is US$26.98.
7. GEOVIA's Whittle™ software was used to provide an optimized pit envelope to demonstrate reasonable prospection for economic extraction. Preliminary pit optimization parameters included overall pit slope of 30 degrees, in-pit mining costs of $2.10, processing and G/A costs of $9/t, and overall mining loss and dilution of 5%. Full details of the preliminary pit-optimization parameters can be found in Table 14-7. The basket price and oxides price list in Table 14-8 are based on forward-looking pricing. These future prices are predicted based on market trends, economic forecasts, and other relevant factors. The actual prices may vary depending on changes in these factors.
8. Figures are rounded to reflect the relative accuracy of the estimate and numbers may not add due to rounding.
9. Resources are presented undiluted and in situ, constrained within a 3D model, and are considered to have reasonable prospects for eventual economic extraction.
10. Bulk density values were determined based on physical test work and assumed porosities for each type of material.
11. Total Rare Earth Oxides: TREO = Y_2O_3 + Eu_2O_3 + Gd_2O_3 + Tb_2O_3 + Dy_2O_3 + Ho_2O_3 + Er_2O_3 + Tm_2O_3 + Yb_2O_3 + Lu_2O_3 + La_2O_3 + Ce_2O_3 + Pr_2O_3 + Nd_2O_3 + Sm_2O_3
12. Magnetic Rare Earth Oxides: MREO = Sm_2O_3 + Tb_4O_7 + Dy_2O_3 + Pr_6O_{11} + Nd_2O_3
13. Heavy Rare Earth Oxides: HREO = Sm_2O_3 + Eu_2O_3 + Gd_2O_3 + Tb_4O_7 + Dy_2O_3 + Ho_2O_3 + Er_2O_3 + Tm_2O_3 + Yb_2O_3 + Lu_2O_3
14. The MRE may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.

1.7 Risks and Opportunities

Approximately 46.2 Mt of the estimated resource at the reported cut-off grade for the current Mineral Resource is in the Inferred Mineral Resource classification. The Inferred Resource is based on limited information and although it is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated or Measured Mineral Resources with further exploration, it is not guaranteed.

There is an opportunity on the Project to extend known mineralization along strike on the Property. There is an opportunity to push the exploration efforts towards resource growth. Continued exploration and drilling of the Deposit with a focus on extending the known limits of the deposit may potentially increase the resource base.

The PCH project shows a regolith profile reminiscent of the rare earth ionic adsorption clay-style deposits. These deposits are formed through the intense weathering of granitic rocks, usually in subtropical climates where high rates of weathering can occur. The rare earth elements are leached from the parent rock and absorbed onto the surfaces of clay minerals within the soil. This adsorption is made possible by the highly ionic nature of these elements, which allows them to be readily taken up and held by the clay.

Most aspects of the project are well defined. The risks are grouped by licensing, markets and social/environmental categories. One of the most significant risks identified for the Project is related to REE markets.

1.8 Recommendations

The Authors consider that the PCH project contains a significant open pit Mineral Resource associated with a well-defined rare earth element and Scandium mineralized trend. The current Mineral Resource Estimate has shown that the Deposit can likely be mined by conventional open pit mining methods.

The Authors consider the Property to have significant potential for delineation of additional Mineral Resources and that further exploration is warranted. Given the current knowledge on the property, there is a high potential for an ionic clay REE deposit. It is SGS recommendation to continue to explore the Deposit, with a focus on extending the limits of known mineralization along strike, as well as infill drill the existing deposit in order to convert portions of Inferred mineral resources into Indicated or Measured.

Given the prospective nature of the Property, it is the Authors' opinion that the Property merits further exploration and that a proposed plan for further work is justified. A proposed work program by SGS will help advance the Deposit towards a pre-development stage and will provide key inputs required to evaluate the economic viability of a mining project at a preliminary economic assessment (PEA) level.

SGS recommends Appia conducts further exploration, subject to funding and any other matters which may cause the proposed exploration program to be altered. For the upcoming period, a total of 3,000 m of drilling is proposed to continue expanding mineral resources and upgrading existing Inferred resources as well as exploring the deposit.

The Authors also recommend a comprehensive metallurgical testing on the top soil, soil and saprolite zones to confirm the capability of the weather zone to be process by heap leach and recover the HREE and LREE with low impact on the environment and local communities. REE deportment studies will detail the ration between the REE in the weather soil profile and the primary mineral. It is advisable to conduct a comprehensive survey employing leaching assays to verify both the presence and assess the recoverable grades of desorbed Rare Earth Elements (REE).

The total cost of the recommended work program is estimated at $1,430,000 (Table 1-2).

Table 1-2 Recommended 2024 Work Program for the PCH Project

Item	Cost in CAD
Resource Expansion Drilling and Resource Classification improvement (3,000 m)	$450,000
Assays / Geochemistry	$120,000
Additional Metallurgical Testing (deportment studies, leach test)	$300,000
Mineralogical Testing	$80,000
Updated Resource Estimate	$80,000
Preliminary Economic Assessment (PEA) Study and Related Studies	$400,000
Total:	**$1,430,000**

2 INTRODUCTION

SGS Geological Services Inc. ("SGS") was contracted by Appia Rare Earths & Uranium Corp., ("Appia" or the "Company") to complete an Mineral Resource Estimate ("MRE") for its Ionic Adsorption Clay (IAC) project located in the State of Goiàs, Brasil, also known as the Cachoeirinha project or the PCH Project ("PCH" or "Project"), and to prepare a National Instrument 43-101 ("NI 43-101") Technical Report written in support of the MRE.

On March 1, 2024, Appia Rare Earths & Uranium Corp. announced an MRE for the Project. The MRE includes Indicated and Inferred resources including:

- The maiden MRE for the PCH Project is estimated at 52.8 million tonnes (Mt) comprising:
    - 6.6 Mt Indicated resource with a grade of 2,513 parts per million (ppm) total rare earth oxide (TREO).
    - 46.2 Mt Inferred resource with a grade of 2,888 ppm TREO

Appia is a publicly traded Canadian company in the rare earth element and uranium sectors. On March 7, 2023, Appia formalized its commitment by signing an earn-in agreement to acquire up to a 70% interest in the Project. The Project spans 40,963 hectares and is strategically located within the Tocantins Structural Province in the Brasilia Fold Belt, situated in the Goiás State of Brasil.

Appia is a Canadian mineral exploration company listed on the Canadian Securities Exchange under the trading symbol "API", and in the USA the shares trade on the OTCQB platform as OTCQB "APAAF". In Germany the shares trade under the symbols A0I.F, A0I.MU and A0I.BE.

The head office and principal address of the Company is located at Suite 500 - 2 Toronto St. Toronto, Ontario, M5C 2B6.

The current report is authored by Yann Camus, P.Eng., Marc-Antoine Laporte, P.Geo., M.Sc. and Sarah Dean, P.Geo. of SGS (the "Authors"). The Authors are independent Qualified Persons as defined by NI 43-101 and are responsible for all sections of this report. The MRE presented in this report was estimated by Camus. The matrix of responsibilities is presented in Table 2-1.

Table 2-1 Matrix of Responsibilities

Qualified Person	Employer	Responsibility Items
Yann Camus, P.Eng.	SGS Canada Inc.	13 to 24, 27, 28, applicable parts of 1, 12, 25, 26 and 29
Marc-Antoine Laporte, P.Geo., M.Sc.	SGS Canada Inc.	2 and 12.2, applicable parts of 1, 25, 26 and 29
Sarah Dean, P.Geo.	SGS Canada Inc.	3 to 11, applicable parts of 1 and 29

The reporting of the MRE complies with all disclosure requirements for Mineral Resources set out in the NI 43-101 Standards of Disclosure for Mineral Projects. The classification of the MRE is consistent with the 2014 Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Definition Standards (2014 CIM Definitions) and adhere as best as possible to the 2019 CIM Estimation of Mineral Resources & Mineral Reserves Best Practice Guidelines (2019 CIM Guidelines).

The current Technical Report will be used by Appia in fulfillment of their continuing disclosure requirements under Canadian securities laws, including National Instrument 43-101 – Standards of Disclosure for Mineral Projects ("NI 43-101"). This Technical Report is written in support of an MRE completed for Appia.

2.1 Sources of Information

In preparing the current MRE and the current technical report, the Authors utilized a digital database, provided to the Author by Appia, and technical reports provided by Appia. All background information regarding the Property has been sourced from previous technical reports and revised or updated as required.

- *The Property was the subject of a NI 43-101 Technical Report by Nico Scholtz Pr. Sci. Nat. and Carlos Henrique Bastos in 2023 titled "NI 43-101 Technical Report on the Cachoeirinha Rare Earth Project, Brazil", for 3 S Ltda and Beko Invest, Issued January 2, 2023.*
- *The Property was subject to a Due Diligence Report by Don Hains, P.Geo in 2023 titled "Due Diligence Report Cachoeirinha (PCH Project) Rare Earth Project Goiás, Brazil" for Appia Rare Earths and Uranium Corp.*

Information regarding the Property accessibility, climate, local resources, infrastructure, and physiography, exploration history, previous mineral resource estimates, regional property geology, deposit type, recent exploration and drilling, metallurgical test work, and sample preparation, analyses, and security for previous drill programs (Sections 5-13) have been sourced from the recent internal technical reports and updated where required. The Authors believe the information used to prepare the current Technical Report is valid and appropriate considering the status of the Project and the purpose of the Technical Report.

2.2 Site Visit

Mr. Marc-Antoine Laporte visited the Project site on November 9 to 12, 2023. During the site visit, Mr. Laporte conducted a general review of the logging and QA/QC procedures in place for the 2022-2023 drill program. Drill hole collars were visited, and selected collar positions checked with a hand-held global positioning system (GPS) instrument. An inspection of the drilling equipment and deviation survey methodology and tools was completed.

An extensive review of the mineralized core/chips from the main zones (Target IV and Buriti) was conducted during the first two days of the visit including discussion of the sampling method with technical staff. He also discussed the geological model and the information needed to build the maiden mineral resources estimate.

2.3 Units of Measure

Units used in the report are metric units unless otherwise noted. Monetary units are in United States dollars (US$) unless otherwise stated.

2.4 Effective Date

The Effective Date of the current MRE is February 1, 2024.

2.5 Units and Abbreviations

All units of measurement used in this technical report are in metric. All currency is in US dollars (US$), unless otherwise noted. All coordinates used in this report are in SIRGAS 2000 UTM Zone 22S, unless otherwise noted.

Figure 2-1 List of Abbreviations

$	Dollar sign	m^2	Square meters
%	Percent sign	m^3	Cubic meters
°	Degree	masl	Meters above sea level
°C	Degree Celsius	mm	millimeter
°F	Degree Fahrenheit	mm^2	square millimeter
µm	micron	mm^3	cubic millimeter
AA	Atomic absorption	Moz	Million troy ounces
Ag	Silver	MRE	Mineral Resource Estimate
AgEq	Silver equivalent	Mt	Million tonnes
Au	Gold	NAD 83	North American Datum of 1983
Az	Azimuth	SIRGAS 2000	Geodetic coordinate system for Latin, Central and South America
CA$	Canadian dollar	mTW	meters true width
CAF	Cut and fill mining	NI	National Instrument
cm	centimeter	NN	Nearest Neighbor
cm^2	square centimeter	NQ	Drill core size (4.8 cm in diameter)
cm^3	cubic centimeter	NSR	Net smelter return
Cu	Copper	oz	Ounce
DDH	Diamond drill hole	OK	Ordinary kriging
ft	Feet	Pb	Lead
ft^2	Square feet	ppb	Parts per billion
ft^3	Cubic feet	ppm	Parts per million
g	Grams	QA	Quality Assurance
GEMS	Geovia GEMS 6.8.3 Desktop	QC	Quality Control
g/t or gpt	Grams per Tonne	QP	Qualified Person
GPS	Global Positioning System	RC	Reverse circulation drilling
Ha	Hectares	RQD	Rock quality designation
HQ	Drill core size (6.3 cm in diameter)	SD	Standard Deviation
ICP	Induced coupled plasma	SG	Specific Gravity
ID^2	Inverse distance weighting to the power of two	SLS	Sub-level stoping
ID^3	Inverse distance weighting to the power of three	t.oz	Troy ounce (31.1035 grams)
kg	Kilograms	Ton	Short Ton
km	Kilometers	Zn	Zinc
km^2	Square kilometer	Tonnes or t	Metric tonnes
kt	Kilo tonnes	TPM	Total Platinum Minerals
m	Meters	US$	US Dollar
UTM	Universal Transverse Mercator	µm	Micron

3 RELIANCE ON OTHER EXPERTS

Final verification of information concerning Property status and ownership, which are presented in Section 4 below, have been provided to the Author by Andre Costa for Appia, by way of E-mail on April 11, 2024. The Author only reviewed the land tenure in a preliminary fashion and has not independently verified the legal status or ownership of the Property or any underlying agreements or obligations attached to ownership of the Property. However, the Author has no reason to doubt that the title situation is other than what is presented in this technical report (Section 4). The Author is not qualified to express any legal opinion with respect to Property titles or current ownership.

4 PROPERTY DESCRIPTION AND LOCATION

4.1 Location

The PCH project is located in Goiás state, Brazil, approximately 216 km by GO-060 from Goiânia, the state capital, and 410 km from Brasilia, the capital of Brazil (Figure 4-1). The property is located approximately 30 km from Iporá, a mid-size city of approximately 31,500 population (2018 census). Access to the property from Iporá is excellent by regional roads, with a mix of hard surface and gravel surface roads. Within the property boundaries, a network of gravel surface rural and unsurfaced farm roads provides excellent access.

The current tenement holdings are detailed in Table 4-1. The PCH property surrounds tenements held by Vale and Dundee Precious Metals in the central area of the tenement package, as well as tenements held by Atlas Litio in the northwest of the overall PCH tenement holdings (Figure 4-2). The Vale and Dundee tenements are associated with a significant ultramafic complex comprised of dunite and peridotite which is the focus of nickel exploration.

4.2 Land Tenure and Mining Concessions

The PCH Ionic Adsorption Clay REE project boasts 22 claims over a total area of 40,963.18 hectares, strategically located within a prime mineralization zone.

Figure 4-1 Location of the PCH Project

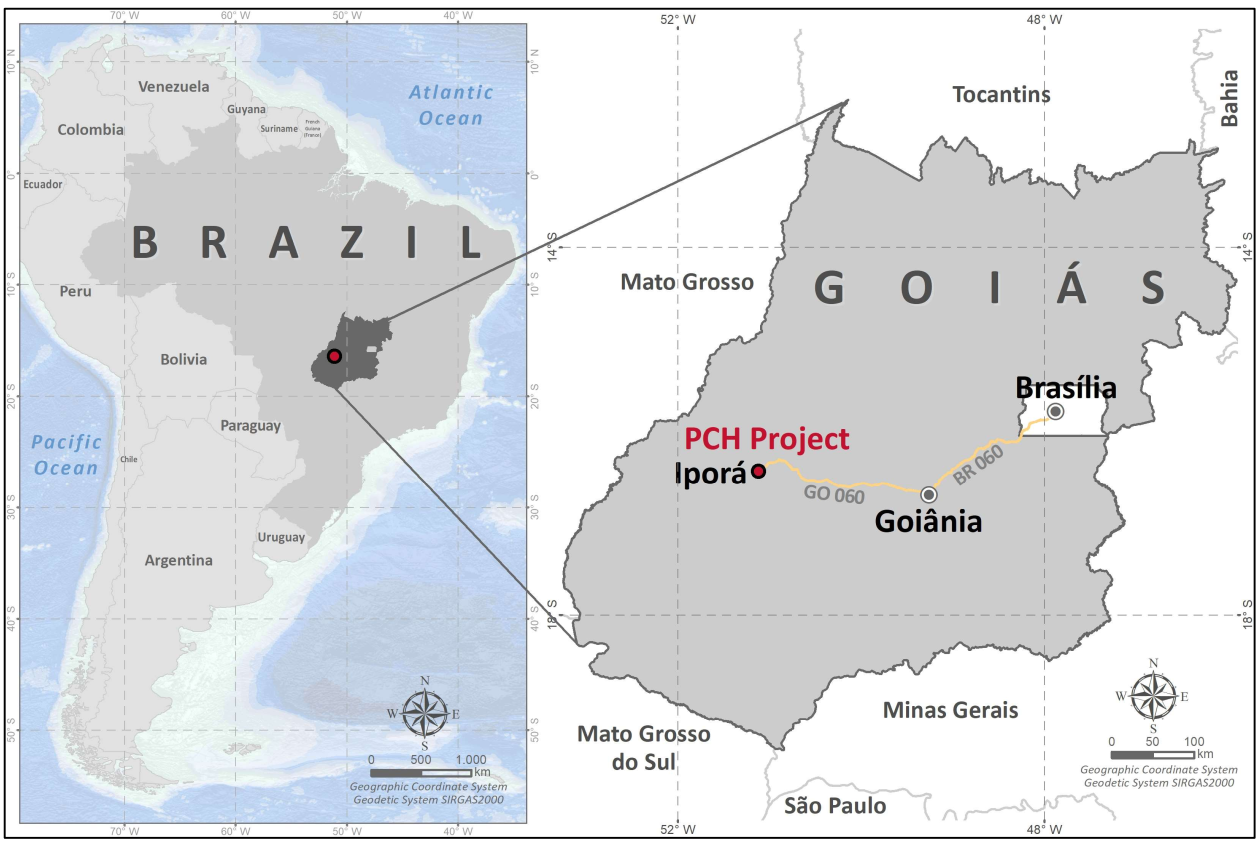
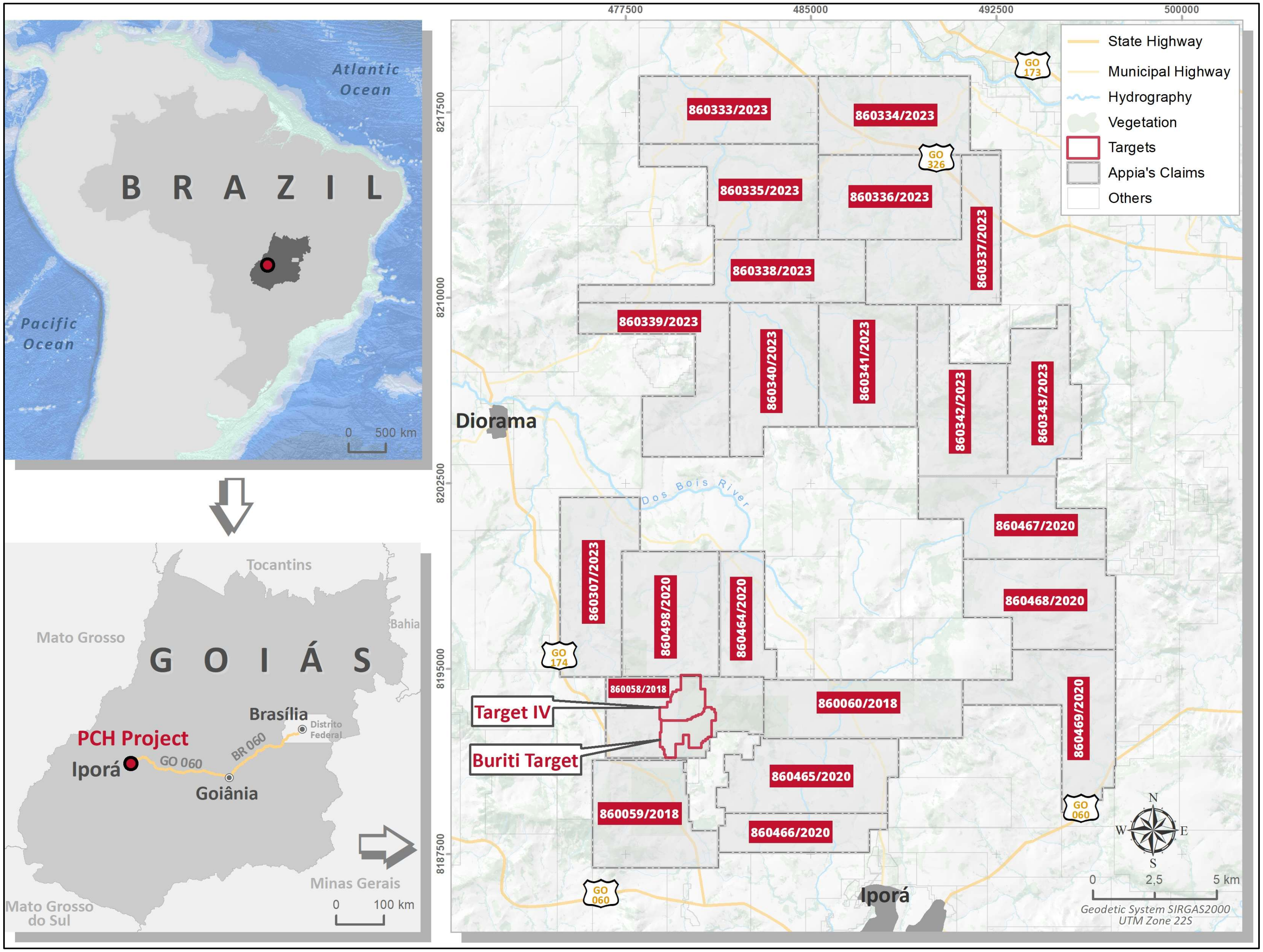


Table 4-1 List of Claims

Claim Process	Area(ha)	Phase	Owner	Substance	Approval Date	Expiry Date	Extended
860466/2020	1005.85	Exploration Application	ANTONIO VITOR JUNIOR	Nickel	--	--	
860339/2023	1982.73	Exploration Permit	ANTONIO VITOR JUNIOR	Rare Earths	12/7/2023	12/7/2026	NO
860335/2023	1980.50	Exploration Permit	ANTONIO VITOR JUNIOR	Rare Earths	12/7/2023	12/7/2026	NO
860336/2023	1984.98	Exploration Permit	ANTONIO VITOR JUNIOR	Rare Earths	12/7/2023	12/7/2026	NO
860337/2023	1983.87	Exploration Permit	ANTONIO VITOR JUNIOR	Rare Earths	12/7/2023	12/7/2026	NO
860338/2023	1964.45	Exploration Permit	ANTONIO VITOR JUNIOR	Rare Earths	12/7/2023	12/7/2026	NO
860341/2023	1982.13	Exploration Permit	ANTONIO VITOR JUNIOR	Rare Earths	12/7/2023	12/7/2026	NO
860334/2023	1983.50	Exploration Permit	ANTONIO VITOR JUNIOR	Rare Earths	12/7/2023	12/7/2026	NO
860340/2023	1969.12	Exploration Permit	ANTONIO VITOR JUNIOR	Rare Earths	12/7/2023	12/7/2026	NO
860342/2023	1965.26	Exploration Permit	ANTONIO VITOR JUNIOR	Rare Earths	12/7/2023	12/7/2026	NO
860343/2023	1647.94	Exploration Permit	ANTONIO VITOR JUNIOR	Rare Earths	12/7/2023	12/7/2026	NO
860059/2018	1864.41	Exploration Permit	AZ125 MINERACAO LTDA	Phosphate	7/17/2018	10/1/2024	YES
860058/2018	1874.60	Exploration Permit	AZ125 MINERACAO LTDA	Phosphate	7/17/2018	10/1/2024	YES
860060/2018	1901.19	Exploration Permit	AZ125 MINERACAO LTDA	Phosphate	7/17/2018	10/1/2024	YES
860465/2020	1978.45	Exploration Permit	AZ125 MINERACAO LTDA	Nickel	4/14/2021	10/1/2024	NO
860467/2020	1984.03	Exploration Permit	AZ125 MINERACAO LTDA	Nickel	9/22/2020	9/30/2024	NO
860464/2020	983.40	Exploration Permit	AZ125 MINERACAO LTDA	Nickel	9/22/2020	9/30/2024	NO
860498/2020	1990.87	Exploration Permit	AZ125 MINERACAO LTDA	Nickel	9/28/2021	10/1/2024	NO
860469/2020	1995.29	Exploration Permit	AZ125 MINERACAO LTDA	Nickel	8/15/2020	10/1/2024	NO
860468/2020	1972.94	Exploration Permit	AZ125 MINERACAO LTDA	Nickel	9/30/2021	10/1/2024	NO
860307/2023	1982.69	Exploration Permit	AZ125 MINERACAO LTDA	Rare Earths	5/23/2023	5/23/2026	NO
860333/2023	1984.98	Exploration Permit	AZ125 MINERACAO LTDA	Rare Earths	5/30/2023	5/30/2026	NO

Figure 4-2 Map of Claims



4.3 Underlying Agreements

An agreement was made as a deed on July 20, 2023 (the Agreement Effective Date) among:

APPIA RARE EARTHS & URANIUM CORP., a corporation duly incorporated under the federal laws of Canada with a head office address of Suite 500 – 2 Toronto St., Toronto, Ontario, M5C 2B6 (“APPIA”).

BEKO INVEST LTD., Company number 2073521, a corporation duly incorporated under the laws of the British Virgin Islands, having a place of business at Level 1 Palme Grove House, Wickham’s Cay 1, Road Town, Tortola, British Virgin Islands (“BEKO”)

ANTONIO VITOR JUNIOR, individual, having an address at Pov Campos São João, ZN. Palmeiras, BA, Brazil 46930-000 (“Antonio”); and

APPIA BRASIL RARE EARTHS MINERACAO LTDA, Brazil’s Taxpayer Number 42.019.578/0001-30, Rua Esmerindo Pereira, s/n, Quadra 06, Lote 02, 76.200-000, Setor Aeroporto Sul, Iporá, GO, Brazil (the “Company”)

WHEREAS APPIA holds 70% of the issued and outstanding Quotas in the Company and Antonio holds the remaining 30% of the issued and outstanding Quotas in the Company and there are no outstanding agreements, options or similar rights to call for the issue of Quotas or to convert any existing securities into Quotas;

AND WHEREAS BEKO is a company controlled by Antonio;

AND WHEREAS the Company holds a 100% interest in the Property and the parties wish to advance the Property through further exploration and development activities.

In order to maintain its 70% Interest, APPIA must make US$10 million in expenditures with respect to the Property and issue 2,000,000 common shares of APPIA to BEKO within five (5) years following the Agreement Effective Date (the “Earn-in Period”) as follows:

(a) on or before the first anniversary of the Agreement Effective Date, expend US$1 million to on a drilling program (including the cost of assays, analysis, MP), for which APPIA shall have earned a 10% legal and beneficial ownership interest in the Company, after which APPIA may elect to enter into a Joint Venture or proceed to earn a further interest in the Company;

(b) on the first anniversary of the Agreement Effective Date, issue 500,000 common shares of APPIA to BEKO;

(c) on or before the second anniversary of the Agreement Effective Date, expend US$3.5 million on a further drilling program (including the cost of assays, analysis, MP), for which APPIA shall have earned a further 20% legal and beneficial ownership interest in the Company to hold a 30% legal and beneficial ownership interest in the Company, after which APPIA may elect to enter into a Joint Venture or proceed to earn a further interest in the Company;

(d) on the second anniversary of the Agreement Effective Date, issue 500,000 common shares of APPIA to BEKO;

(e) on or before the third anniversary of the Agreement Effective Date, expend US$3.5 million on a further drilling program plus metallurgical testing (testing leaching solutions and flotation route at pilot plant on a lab scale), for which APPIA shall have earned a further 10% legal and beneficial ownership interest in the Company to hold a 40% legal and beneficial ownership interest in the Company, after which APPIA may elect to enter into a Joint Venture or proceed to earn a further interest in the Company;

(f) on the third anniversary of the Agreement Effective Date, issue 500,000 common shares of APPIA to BEKO;

(g) on or before the fourth anniversary of the Agreement Effective Date, expend US$1.5 million for a pre-feasibility study, Feasibility Study, Marketing for the Market, certifying etc., for which APPIA shall have earned a further 15% legal and beneficial ownership interest in the Company to hold a 55% legal and beneficial ownership interest in the Company, after which APPIA may elect to enter into a Joint Venture or proceed to earn a further interest in the Company;

(h) on the fourth anniversary of the Agreement Effective Date, issue 500,000 common shares of APPIA to BEKO;

(i) on or before the fifth anniversary of the Agreement Effective Date, provide US$500,000 for general operations, for which APPIA shall earn a further 5% legal and beneficial ownership interest in the Company to hold a 60% legal and beneficial ownership interest in the Company; and

(j) during the Earn-in Period, Appia shall be deemed to be the Operator and be subject to the obligations of Clause 4.1 of the Agreement.

4.4 Surface Rights

Surface rights in Brazil are owned by landowners. The owner of an Exploration Authorization (EA) is guaranteed, by law, access to perform exploration field work, provided adequate compensation is paid to third party landowners and the owner of the EA accepts all environmental liabilities resulting from the exploration work.

4.5 Permits

Mineral rights in Brazil are reserved to the federal government and governed by the Mining Code. The mining code is administered by the Agência Nacional de Mineração (ANM). Surface rights are retained by the landowner with whom access is negotiated. Under the legislation defined by the Mining Code, two principal types of mineral licenses can be granted:

- Exploration Permit;
- Mining Permit Application, and;
- Mining Concessions.

The Exploration Permit entitles its holder, to the exclusion of all others, to explore for minerals. After the approval of a Permit application the Exploration License is valid for three years and can be extended for a period equivalent to the first term, subject to ANM approval. An Exploration License allows its holder to conduct mineral exploration activities within the authorized area but does not permit commercial mining activities. During the initial three years of an Exploration Permit an annual fee per hectare must be paid to the ANM with a value of R$4.53 per hectare. During the extension of the Permit the fee is R$6.78 per hectare.

After the approval of the Final Exploration Report the holder can apply for a Mining Permit that can be transformed into a Mining Concessions upon approval of a Final Economical Assessment and the approval of Environmental Assessment Studies. Usually, the holder has between one and two years to get these reports filed into the ANM and Environmental Agency.

Mining Concessions are subject to the payment of a production tax known as “Compensação Financeira pela Exploração de Recursos Minerais” (CFEM) which is based on the gross sales value of the mineral that is produced. For rare earths, the tax rate is 2% of the gross sales value, and can be paid up to 30 days following the sale of the production.

For Mining Concessions, the holder must pay the surface rights holder a value between 1% and 2% as royalty. Holding a valid agreement with the surface rights holder is a pre-requirement for Mining Concession grant. If no agreement can be reached, judicial means can be used. Mining Concessions are valid for the life of the mining operation on the mineral deposit and are subject to annual filings of the production results.

4.6 Environmental Considerations

A complete legislation regarding the permanent protection zones around rivers and creeks can be found on the following website (https://www.planalto.gov.br/ccivil_03/_ato2011-2014/2012/lei/l12651.htm). For most of the creeks in the Project area a 30 meter buffer zone is applied.

4.7 Other Relevant Factors

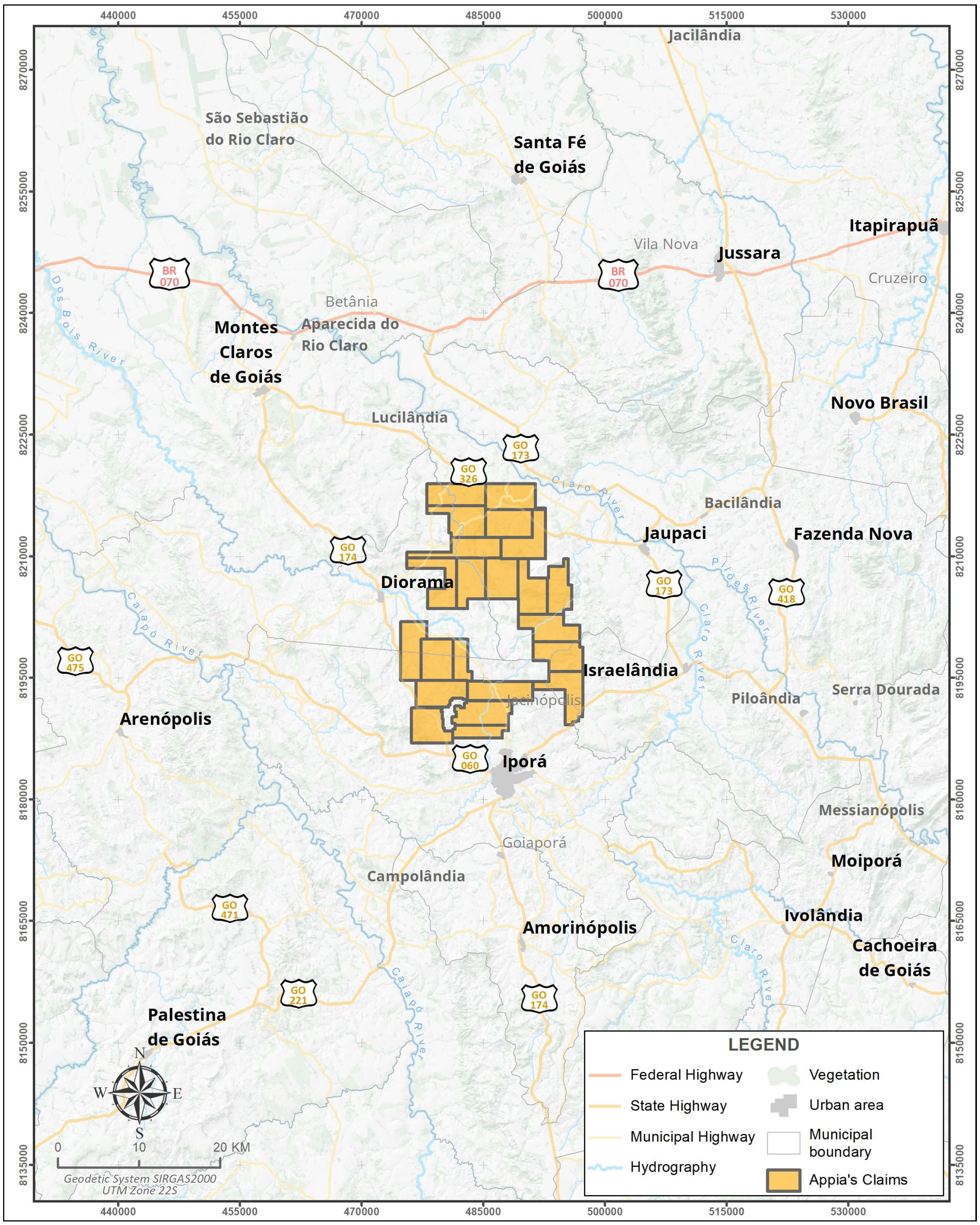
The Project has no outstanding environmental liabilities from prior mining activities. The Author is unaware of any other significant factors and risks that may affect access, title, or the right, or ability to perform exploration work recommended for the Property.

5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE, AND PHYSIOGRAPHY

5.1 Accessibility

The Property is accessed from Iporá is ideal through a well-developed network of regional roads (Figure 5-1). These roads offer a blend of hard and gravel surfaces, ensuring smooth and reliable transportation. Within the property boundaries, exists a well-maintained network of gravel-surfaced rural roads and unsurfaced farm roads that provide project accessibility.

Figure 5-1 Property Location Map



5.2 Local Resources and Infrastructure

In addition to its strategic location, the presence of power and water adds to the project's economic significance and underscores the potential for long-term resource extraction. The project is well-equipped to harness these resources while maintaining environmental responsibility and compliance with relevant regulations.

The nearest railway siding is located at Goiânia 216 km to the east of the project. This railway line leads north to the town of Palmas or south to Sao Paulo. Labour will be available from nearby regional towns and settlements. Potential tailings storage areas, waste disposal areas, heap leach pads, and potential processing plant sites can only be supplied after an Environmental Impact Assessment has been completed. Goiania should be able to supply most exploration requirements and comply with all sustenance supplies.

The city of Iporá is situated 10 km from the Project, with an estimated population of 31,499 inhabitants (2020 Census). Electricity is provided by the concessionaire "Enel Distribuição Goiás", in addition to the city offering other infrastructures, such as: Municipal airport, four hospitals, fire department, Civil and Military Policing, and Hotels and Restaurants.

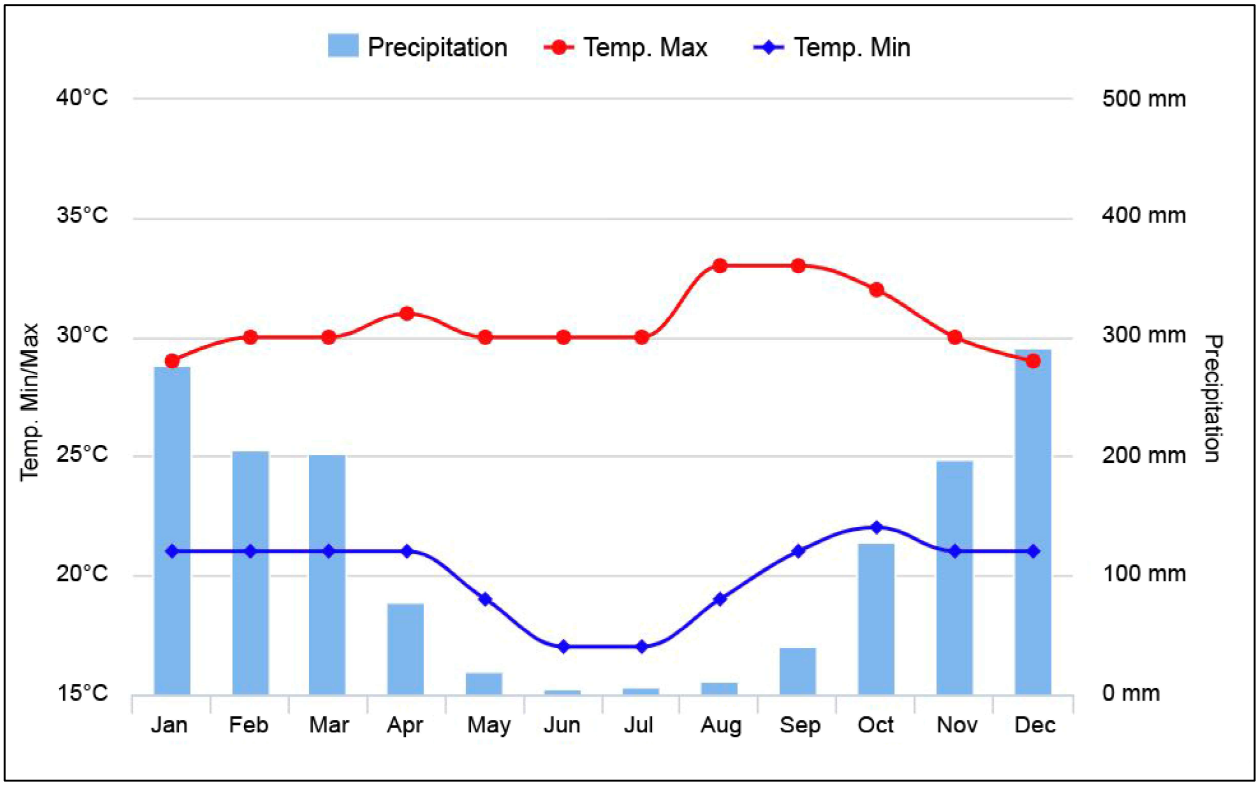
5.3 Climate

The predominant climate is tropical, hot, and semi-humid, with two well-defined seasons: a rainy one (between October and March) and a dry one (from April to September). The average annual rainfall (rainfall) is 1,500 mm. The average annual temperature varies between the maximum temperatures reaching up to 33 °C and the minimum 17 °C. The project is located within a low to medium rainfall area with no surface water except in the creeks.

5.4 Physiography

The vegetation in the area is represented by fields, savannas, and gallery forests. The "cerrado" is the corresponding biome of the mapped area, characterized by the occurrence of grasses, shrubs, and spaced trees, such trees have thick bark, crooked trunks, and roots deep. Currently, the vegetation is replaced by pastures planted in extensive areas. An anthropogenic area with intense livestock activity, razed relief with some elevations highlighted in the relief.

Figure 5-2 Temperature and Precipitation Monthly Variation in the PCH Project Area. (Source: https://www.climatempo.com.br/climatologia/2175/ipora-go).



6 HISTORY

6.1 Previous Work

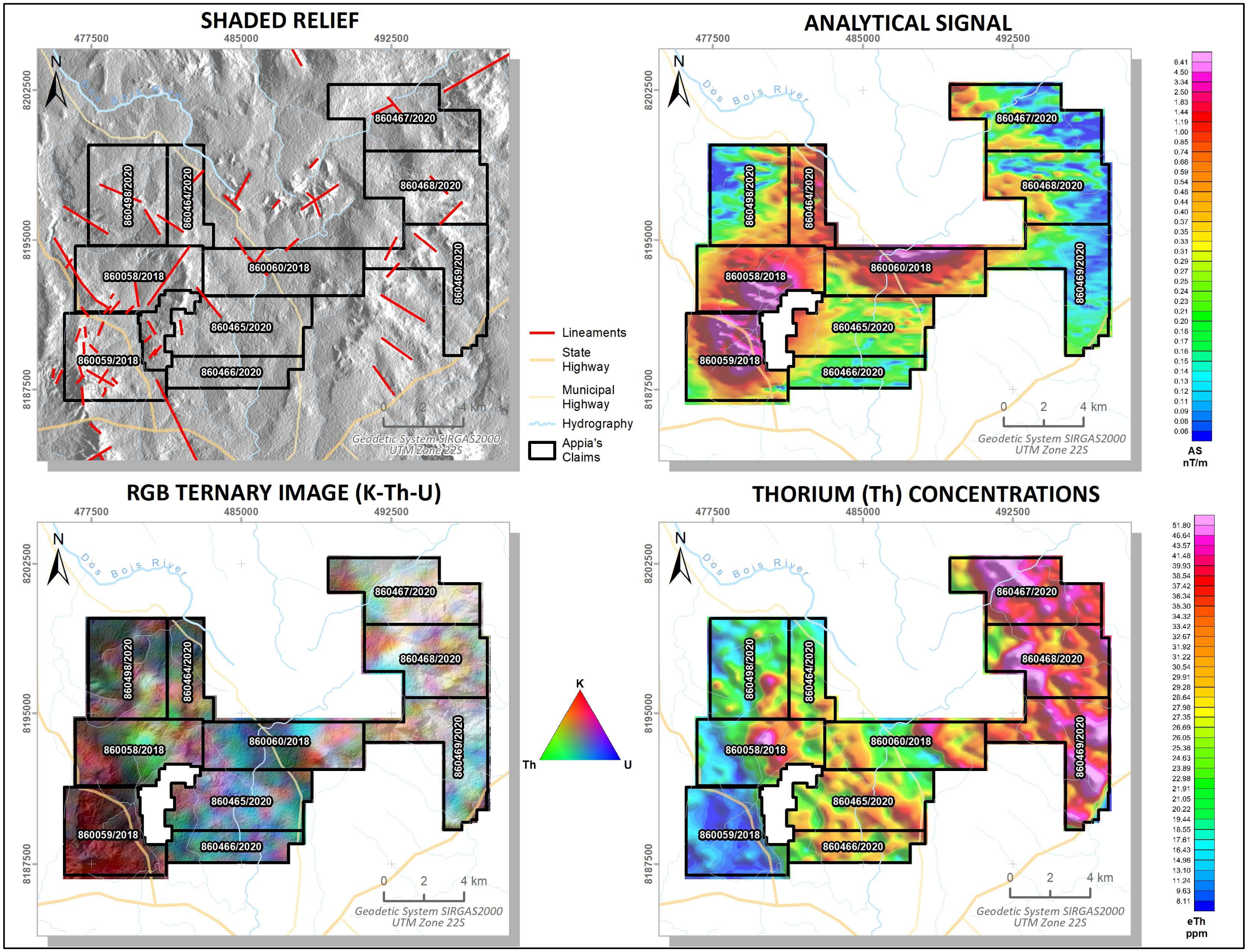
The Exploration Permit Holder (EPL Holder) completed the following exploration work on the four target areas between 2019 and 2021:

- Generation of geophysical map products
- Geological mapping
- Geochemical surveys (including stream sediment, rock grab as well as diamond drilling, trenching and augering)
- Ground geophysical surveys
- Potential for mineralization investigated.

6.1.1 Airborne Geophysical Signatures

During the pre-field stage, images from existing geophysical surveys and remote sensing were studied which provided information about the chemical and rheological composition of surface and subsurface materials. This primary analysis allows us to infer the main contacts between lithological units, as well as structural features. Thus, four distinct products were generated, which are presented in Figure 6-1.

Figure 6-1 Map with Structural Lines Drawn from the Digital Elevation Model; Map with the Total Gradient; Ternary RGB Product; Gammaspectrometric Product with Potassium Channel (%) (Source: 3S Ltda)



The airborne geophysical data used in the study come from the Aerogeophysical Survey Project of the State of Goiás – 1st Stage – Arenópolis Magmatic Arc – Anápolis-Itauçu Complex – Juscelândia Vulcan-Sedimentary Sequence, carried out by LASA Engenharia e Prospecções S/A at the service of CPRM. The airborne geophysical survey, developed in December 2004, covered an area of 58,834 km² with 135,756,531 km of high resolution aeromagnetometric and aerogammaspectrometric profiles (LASA, 2004). The airlift flight and control lines are oriented N-S and E-W directions and spaced every 0.5 km and 5.0 km, respectively. The flight height was defined as 100 m over the ground and the interval between consecutive geophysical measurements equivalent to 0.1 s for the magnetometer was 1.0 s for the gammaspectrometer (LASA, 2004).

The main products used for the Cachoeirinha Project were the Total Gradient (ASA), highlighting the zones with the highest and lowest magnetic responses; Ternary RGB map, through the identification of domains later associated with outcrop lithologies; and the equivalent Thorium channel map, associating the relationship of Th with the enrichment in Rare Earth Elements.

6.1.1.1 Magnetic data processing

After compiling and correcting the data the following products were generated:

- Anomalous Magnetic Field;
- Total Gradient (ASA);
- 1st Vertical Derivative of the Anomalous Magnetic Field;
- 1st Horizontal Derivative X of the Anomalous Magnetic Field;
- 1st Horizontal Derivative Y of the Anomalous Magnetic Field;
- Analytical Signal.

6.1.1.2 Radiometric data processing

After the steps of compiling and correcting the data, it was possible to generate the following products:

- Potassium channel (%);
- Thorium channel (ppm);
- Uranium channel (ppm);
- Ternary (RGB);
- Factor F.

Some maps are shown in Figure 6-2 and Figure 6-3.

Figure 6-2 Total Count (TC) Radiometric Signal at Target IV

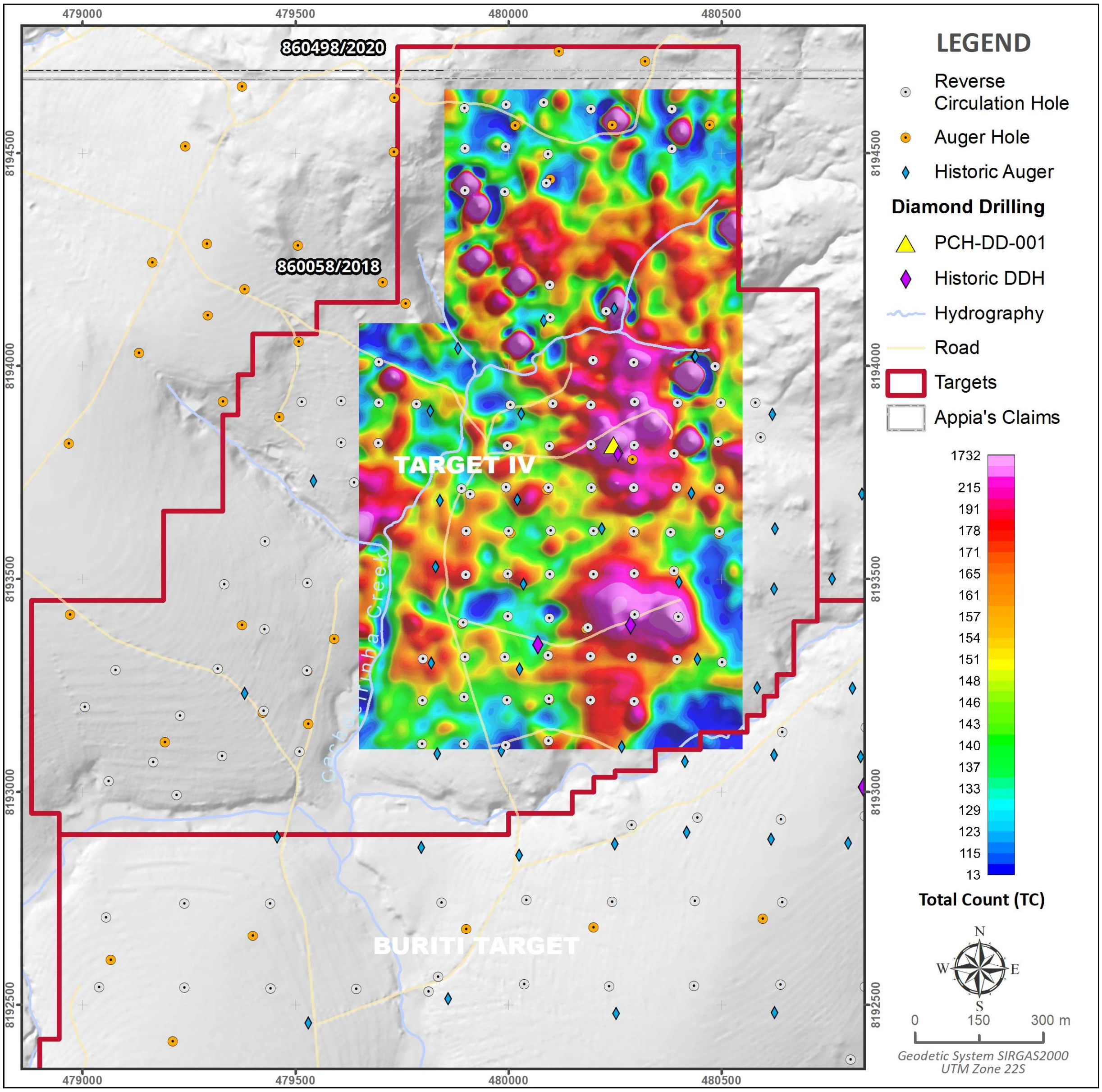
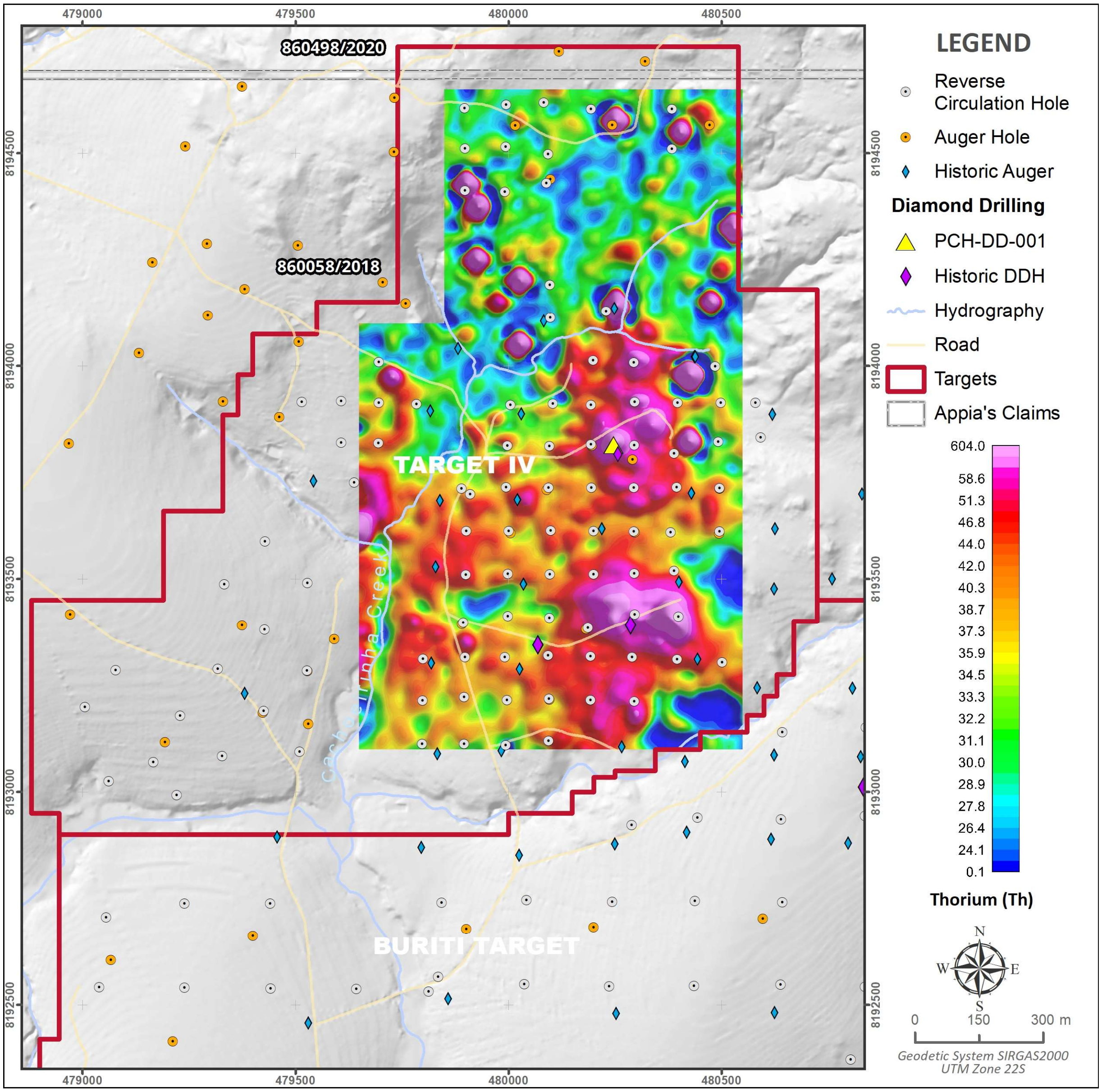


Figure 6-3 Th Radiometric Signal at Target IV



6.1.2 Geological Mapping

Several geological mapping campaigns were developed from September 2019 until now with a semi detailed and detailed scale. In four of the ten research mineral processes, the priority was given to the areas with alkaline intrusions and/or alkaline intrusions adjacent to them, obtaining a significant density of described field points and great detailing of outcropping rocks and soil from walking in EW direction mapping lines. A geological map was also generated for all the mapped. The identified macro units and their associated lithologies will be presented below, corresponding to Neoproterozoic metamorphic syn-tectonic rocks and late to post-tectonic igneous rocks from the Arenópolis Magmatic Arc, sedimentary rocks from the Paraná Basin, and cretaceous intrusive plutonic and subvolcanic rocks from the Goiás Alkaline Province.
The main lithological units mapped in the project are part of the Fazenda Buriti Complex, which in turn intrudes the deformed rocks of the Ribeirão Santo Antônio Metagranite, the Iporá Granite, and the Furnas Formation. The contacts are mostly igneous, except for the contact between the Pre-Cambrian units and the sedimentary Paraná Basin unit. The plutonic intrusion of the Fazenda Buriti Complex comprises ultramafic, mafic, and felsic alkaline rocks, evidencing a fractional crystallization process that starts with olivine pyroxenites, gabbros, gabbro norites and becomes increasingly differentiated and enriched in silica, up to nepheline syenites. The dynamism of magmatism with different magmatic pulses caused the formation of breccias composed of already crystallized rock fragments (pyroxenites) with a syenitic matrix composition, presumably the final composition in the magma development. The presence of hydrothermal alterations and mineralization of the breccia, especially near the edge of the body, may indicate possible interactions with the enclosing Iporá Granite.

In the Cachoeirinha Project, we have:

- rocks developed in a magmatic arc environment of Neoproterozoic age that were later metamorphosed and deformed if culminated the formation of the Brasília Belt, with approximately 600 Ma and corresponding to the Ribeirão Santo Antônio Metagranite.
- (ii) post-collisional late magmatic event, aged between 506-597 Ma, represented by the Iporá Granite igneous rocks.
- (iii) sedimentary covers in a period of “tectonic calm” with the Silurian-Devonian age of the Furnas Formation. And
- (iv) Cretaceous alkaline magmatism intruding the other units and corresponding to the lithological varieties of the Goiás Alkaline Province.

6.1.3 Structural Interpretations

The researched area is inserted in the context of geotectonic influence between two crustal-scale dextral transcurrent faults: the Transbrasiliano Lineament (LTB), located to the west, and the Moiporá-Novo Brasil Shear Zone (ZCMNB), located to the east, both interpreted as a series of deep ductile shear zones. The ZCMNB is an N-S shear zone that separates Neoproterozoic rocks from the Arenópolis Magmatic Arc from the Goiás Archean Block. Its ramifications generate structures with second-order NNW-SSE and NW-SE directions. The structuring of the metamorphic rocks in the project – the Ribeirão Santo Antônio Metagranite unit – follows this NW-NNW trend.

Eighty-two structural measurements were taken during semi-detailed and detailed mapping, the main measurements being related to the directions of subvolcanic alkaline dykes, fracture planes, fault directions, and foliation planes.

Most of the outcropping lithologies in the project are composed of igneous and sedimentary rocks, so the structures presented are in majority related to regional tectonic reactivation and accommodation.

- Faults and Fractures
    - Directions and planes of faults and fractures were measured throughout the project, highlighting the fractures filled by alkaline dykes, with a predominant trend NW-SE and NESW, but also E-W.
    - Faults and fractures were also identified by analyzing the Digital Elevation Model and the orientation of rectilinear streams in the larger igneous intrusions, mostly following the same NW-SE and NE-SW regional trends.
- Foliations
    - Directions and planes of foliation were measured in the Metagranite Ribeirão Santo Antônio unit, in which it was possible to identify two different patterns: predominant NW-SE foliation, with sub-vertical dip to northeast and southwest; and mylonitic foliation in an NNW-SSE shear zone. As there are few outcrops in situ in the unit, it was not possible to develop a temporal relationship between the two foliations in the field.

6.1.4 **Geochemical Surveys**

The geochemical data surveys were carried out using distinct methodologies that will be discussed below: current active sediment geochemistry, lithogeochemistry (of rocks collected in the field), trench sample geochemistry, drill holes and auger drilling geochemistry.

6.1.4.1 Stream Sediment

This stage of the project consisted of collecting 85 samples of active stream sediment, featuring a sampling grid with all the project's hydrographic basins sampled. The results obtained, highlight the presence of chromium, nickel, and vanadium in the portions equivalent to the Rio dos Bois and Fazenda Buriti intrusive complexes.

The samples collected on the surface provided important information regarding the location of geochemical anomalies, which were later investigated and confirmed. And they present results indicating mineralization in rocks that are products of surface alteration and enrichment.

6.1.4.2 Rock Grab Sampling

During geological mapping (regional, semi-detail, and detail) 231 rock samples were collected for lithogeochemical analysis and 31 samples for petrography. The samples to lithogeochemical were sent to the SGS Geosol laboratory to observe the presence of elements with anomalous contents, such as the rare earth elements (mainly Ce, La, Nd, Y, and Pr), niobium, vanadium, nickel, and chromium, and elements associated with the mineral phases containing the mentioned elements, such as Ba, Sr, Th, P, Zr, and Fe.

The results, as well as other geochemical sampling methodologies, were promising, with the presence of niobium and rare earth elements in a whole rock, especially surface alteration rocks containing chalcedony - classified as metachert and ferruginous chert (PCH-ET- R-063-B, PCH-Alvo2-PB-121, and PCH-ET-R-354, ET-R-584, PCH-CHECK-7, PCH-ET-R-485, among others). Centimeter-size dikes containing chalcedony (PCH-SA2-PB-120B) with LREE (Light Rare Earth Elements) contents of up to 24,851 ppb and 14,751 ppm of HREE (Heavy Rare Earth Elements).

By extrapolating the detection limits of the analysis packages used in the SGS Geosol laboratory, some samples were reanalyzed using X-Ray Fluorescence (FRX), obtaining niobium contents between 0.1% (PCH-ET-R- 354D) up to 1.21% (PCH-ET-R-480). To better understand the mineral phases to which these contents are related, X-Ray Diffractometry (XRD) was used, however, due to laboratory problems, the X-ray diffractograms did not show good quality, making their interpretation difficult.

The results also show that some samples have higher concentrations for some oxides, such as SiO_2 (up to 97.7% in rocks altered with quartz and chalcedony), and Fe_2O_3 (79.1% to 93.7% in magnetitites). Analyses of ferruginous concretions also showed high Fe contents (%), as expected.

It is observed that samples with higher REE and Nb values are linked to the increase of other elements as well, defining some associations, such as LREE +Ba+Sr+Th, Nb+Y+P+Pb+Th, and Ce+ Ba+P. This observation is important to correlate mineral content and composition and to better understand the genesis and behavior/occurrence of mineralization. Thorium is especially important in the aforementioned associations of elements, and it was widely used in detailed geological mapping campaigns with a portable gamma spectrometry. Where Th values were higher, better geochemical results were obtained.

6.1.4.3 Trenches

The trench campaign aimed to investigate the occurrence of REE and niobium in the oxidation profile where the samples with the highest contents for these elements were collected. Ten trenches in total were excavated Table 6-1.

Table 6-1 Trench Details Completed on the Cachoeirinha Project (Source: 3S Ltda)

Trench ID	X	Y	Z	Length (m)	EOH
PCH-TR-01	480264	8194124		5	3.5
PCH-TR-02	480228	8194092		5.5	3.4
PCH-TR-03	480239	8193814		8	3.4
PCH-TR-04	480351	8193879		8	3.5
PCH-TR-05	480436	8193977		8	3.7
PCH-TR-06	480288	8193387		7.2	3.4
PCH-TR-07	480398	8193413		6.7	4
PCH-TR-08	480246	8193230		7	2.6
PCH-TR-09	478128	8195114		12	3.75
PCH-TR-10	480873	8191942		12	3

Some of the trenches presented high contents of Rare Earth Elements and niobium, with up to 5592.3 ppm of Nb and an REE sum of 38379.3 ppm in Trench 03. Other important elements are vanadium and lead with expressive results. Like the lithogeochemical results, in the trenches geochemical results it is also possible to identify associations of elements, such as LREE+Ba+P, HREE+Nb+Ba+P+Sr+V, and REE+Ba+Fe+P+Th+Pb, which may become explorational guides.

The confirmation of enrichment in the alteration profile occurred with sampling in trenches with values for REE and Nb already in the first 10 meters of the excavations. Exploratory drill holes and auger holes provided information on the complete oxidation (alteration) profile and the source rock in-depth, in which it is possible to observe variations of the various chemical elements analyzed.

6.1.5 Drilling

Four vertical diamond drill holes were drilled to investigate the source rocks of found geochemical anomalies Two drill holes intercepted the Granito Iporá host unit and drilled only up to 30 meters. Two drill holes intercepted the Fazenda Buriti Complex alkaline breccia, with fragments of pyroxenite and a matrix of syenitic composition containing hydrothermal alteration: these holes reaching up to 100 meters. Diamond drill hole specifications are presented in Table 6-2.

Table 6-2 Drill Hole Details Completed by the Vendor on the Cachoeirinha Project (Source: 3S Ltda).

HOLE ID	X	Y	Z	AZIMUTH	DIP	EOH
F-01	480247	8193820	655	-90	0	100,00
F-02	480287	8193390	661	-90	0	27,65
F-03	480834	8193010	672	-90	0	100,65
F-05	480070	8193340	650	-90	0	32,95

The two holes that intercepted the alkaline breccia were sampled meter by meter. The results were expressive for niobium and rare earth elements in the upper alteration profile (first 10 m), but also in the source rock, the alkaline breccia. The contents reach up to 19,629 ppm in total REE, 6081 ppm of Nb and 1562 ppm of V in the superficial portion of F01 (Drill hole 01), and 3560 ppm of REE and 524 ppm of Nb in the unaltered rock, also in Drill Hole 01. In F03 (Drill hole 03), the the sum of REE is 4999 ppm, 2376 ppm of Nb and 1208 ppm of V in the alteration profile and 415 ppm of Nb and 692 ppm of V in the unaltered rock. As it does not present high levels of REE, the rock portion from meter 30 to 101 in Drill Hole 03 was not analysed with the standard package for rare earth elements (IMS95R – Determination by fusion with lithium metaborate – Rare Earths – ICP MS) of SGS Geosol.

Chemical elements associations were also identified in the Drill Hole geochemistry, both for REE and Nb. It is possible to establish the relationship between the elements in the alteration profile and the unaltered rock, providing indications about the type and nature of the mineralization. For the rock alteration zone, the association REE+Nb+Ba+Fe+P occur in Drill Hole 01 and REE+Nb+Ba+P+V+Zr in Drill Hole 03, while in the unaltered rock profile high values of Ba, Fe, P and Sr are identified.

Images below contain the drilling drill log for drill holes 01 and 03 and the grade curves of different geochemical groups (rare earth elements and niobium, sum of rare earth elements, major elements and trace elements) and their behaviour in the sampled profile. Hole 01 contains the highest contents of REE, Nb, vanadium, among others, the interval between 2 m and 5 m presents the most interesting results. Hole 03 also has its highest grades between the second and fifth meters, with additional peak results between 7.5 and 10 meters.

It is possible to identify in all the graphs that the lithological variation is directly linked to the geochemical behaviour, leading to the following statements:

- In the unaltered rock profile intervals where alkaline breccia with hydrothermal alteration predominates are more enriched in REE and Nb.
- (ii) Elements such as Fe, Al, Ti and V are higher in the alteration profile while Ca, Mg and Sr increase considerably in the unaltered rock.
- (iii) Ca presents concentration peaks in intervals where the alkaline breccia with hydrothermal alteration predominates, while Mg and Fe occur in greater abundance in intervals with pyroxenite and olivine pyroxenite.
- (iv) Ba and P have peaks with high values in the alteration profile but remain relatively high in the unaltered rock as well.

Images below were created from the geophysical integration (magnetometry and gammaspectrometry) with the geochemical results of the auger holes in Target IV and highlight the existence of geophysical domains that coincide with positive geochemical results, more precisely in the northwest portion of the Fazenda Buriti Complex in contact with the Iporá Granite, where Hydrothermalites outcrop.

6.1.5.1 Auger

Continuing the subsurface exploration, especially at Target IV, 51 (fifty-one) vertical auger holes of up to 10m were drilled in a 400x400 m and 200x200 m regular grid, to investigate the oxidized (altered) portion of the area interpreted as a breccia zone and determine the portions with the highest content of REE and Nb. Were collected 343 auger samples with one-meter length each. The main units identified in the holes through systematic description were the Iporá Granite and rocks from the Fazenda Buriti Complex (alkaline breccia and pyroxenite), as well as sandstone and trachyte in the three holes drilled in Target V, north of Target IV.

In general, the best results pointed to a specific area north of Target IV. The results were promising for the presence of light Rare Earth Elements and Niobium. The grades reach up to 16.648 ppm in the REE sum in auger hole 23, and above 1000 ppm of Nb in auger hole 18.

6.1.6 Ground Geophysical Surveys

Geophysics is an important tool for discovering mineral deposits and while executing mineral exploration in the Goiás Alkaline Province, these surveys are indispensable for the identification of different rock types, whether plutonic, subvolcanic, or volcanic, as they present composition usually quite different from the country rocks and can be quite magnetic. In the case of the plutonic intrusions located in the northern portion of the GAP, there is still the Complexes circular pattern, contributing to their identification.

In the Cachoeirinha Project, the products generated from terrestrial geophysics not only contribute to the recognition of the rocks part of the Goiás Alkaline Province and their host rocks - despite being extremely useful but also to the identification heterogeneities within the Fazenda Buriti Alkaline Complex, helping to establish a geophysical signature in the mineralized portions of the intrusion. Image below is a map with the main geophysical products used during the research, the geological units, and their contacts drew from terrestrial geophysics interpretation.

The most used geophysical products obtained were:

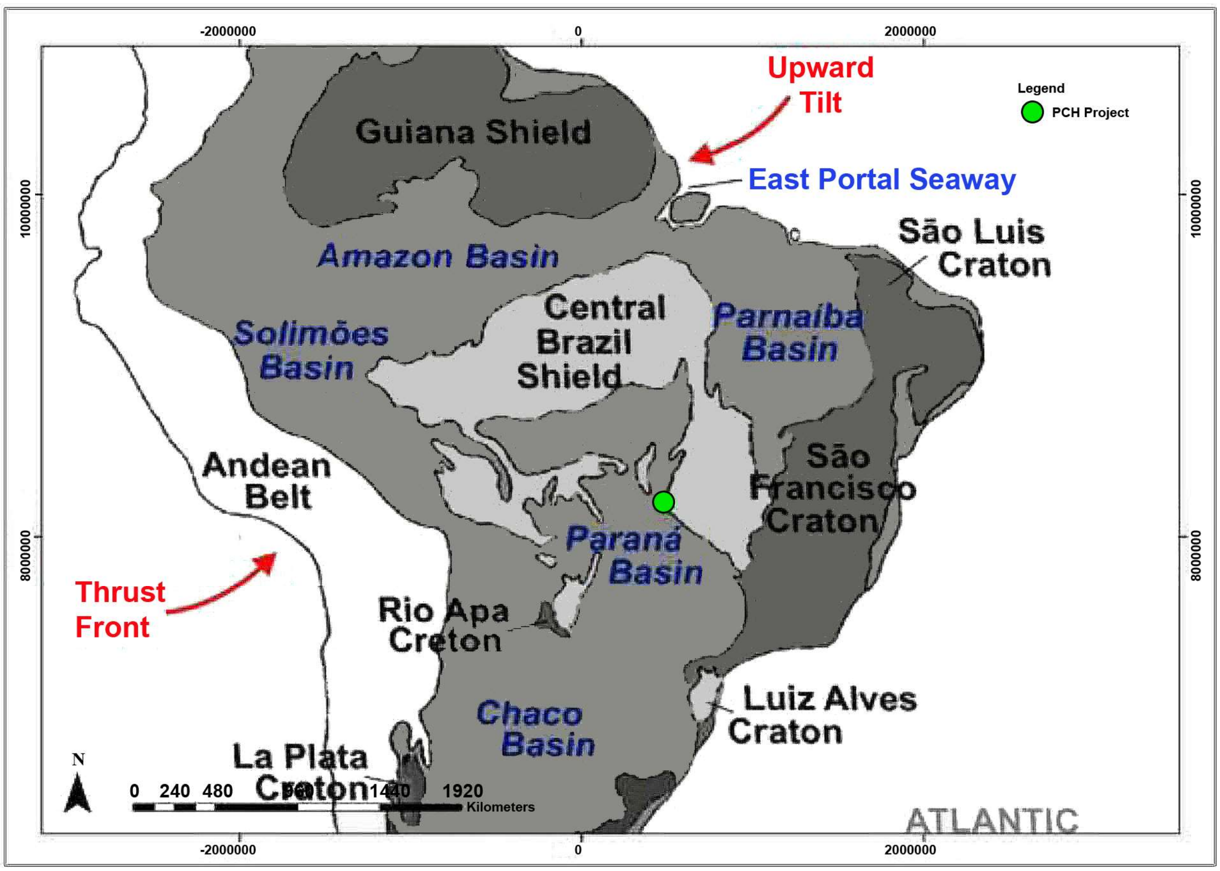
- Terrestrial magnetometry: Analytical Signal Amplitude (ASA), marking the contours of the main magnetic intrusions (Fazenda Buriti Complex and Rio dos Bois Complex); and First Vertical Derivative (1DZ), contributing to the identification of local structural patterns with the trace of magnetic and non-magnetic structures.
- Terrestrial gamma spectrometry: Thorium (eTh), helping to distinguish the portions within the Fazenda Buriti Complex that are more likely to be enriched in REE and Nb (); Potassium (K%), enabling the definition of contacts with the Iporá Granite, usually rich in the element; and Ternary RGB Ternary which marks the high count of the three radioelements K, U and Th in the Iporá Granite, with whitish to light pink color and low in radioelements in the outcropping portion of Fazenda Buriti Complex, characteristic of mafic-ultramafic rocks.
- Electrical resistivity: Electrical resistivity surveys aim the identification of electrical signature in areas with the best geochemical results through their susceptibility contrasts. Image 5.8 shows a schematic block where the first electrical resistivity campaign was carried out, in which it is possible to identify high and medium resistivity (in pink and yellow) of the Iporá Granite in Drill Hole 2 and the low resistivity of the alkaline breccia (in blue) in Drill Hole 1. This is because the rocks of the Faz Buriti Complex are rich in magnetite, sulfides, and other minerals with greater electrical conductivity than the minerals forming the Iporá Granite.

7 GEOLOGICAL SETTING AND MINERALIZATION

This section of the report is largely derived from the Due Diligence Report prepared for the Company by Don Hains on July 1, 2023.

The geology of Brazil comprises a significant portion of very ancient carton basement rock from the Precambrian overlain by sedimentary rocks and intruded by igneous activity; all of which has been impacted by the rifting of the Atlantic Ocean. Much of the basement rock underlying Brazil formed during the Precambrian, including the São Francisco Craton which outcrops in Minas Gerais and Bahia. In the Mesoproterozoic, the Rio de la Plata craton (beneath southern Brazil), the Amazonia Craton and the small São Luis Craton and sections of the Congo Craton which form the basement rock were joined with Africa. Figure 7-1 illustrates the geological setting of Brazil and the location of the PCH project.

Figure 7-1 Geological Setting of Brazil



7.1 Regional Geology

The PCH project is located within the Toncantins Structural Province in the Brasilia Fold Belt, which is part of the Goiás Magmatic Arc. The Tocantins Province is composed of a series of SSW-NNE trending terranes of mainly Proterozoic ages which stabilized in the Neoproterozoic in the final collision between the Amazon and São Francisco cratons. The Tocantins Province is divided into an eastern and western section. The eastern section is located in a N-S arc-shaped folded belt known as the Brasilia Folded Belt (BFB), which extends northwards to the state of Tocantins and southwards to the state of Minas Gerais (Figure 7-2). The Brasilia Fold Belt consists of a deformed mobile belt deposited during the Meso to Neoproterozoic in the western margin of the Sao Francisco Craton over a basement of Paleoproterozoic granitic-gneissic terrane affected by Mesoproterozoic deformation. The Serra Verde rare earth project is located at the northern end of the BFB, while the southern end is represented by the Araxa rare earth deposit. The PCH project lies approximately at the centre of the BFB on the western margin of the belt.

The Toncantins Province orogen was formed by the Brazilian/Pan-African cratonic collision, located in the central-north portion of Brazil between the Amazon, São Francisco, and Paranapanema cartons. The mobile folding belts part of the Toncantins Province is composed of supracrustal volcano-sedimentary rocks, granitic intrusions and subordinate basic-ultrabasic bodies. The Brasilia, Araguaia and Paraguay ranges are situated within this geotectonic domain, with the Brasilia Belt around a west edge of the São Francisco Craton oriented in a preferential north-south direction, and the Araguia and Paraguay belts bordering to the east and southwest of the Amazonian Craton.

7.2 Local Geological Setting

The northern border of the Parana Basin in central Brazil was subject to a very active erosive scenario during the Upper Cretaceous period with the intrusion of alkaline magmatism in the area. Three geological provinces are located in the region: the Goiás Alkaline Province, the Alto Paranaiba Igneous Province and the Porixoréu Province. The PCH project is situated within the Goiás Alkaline Province (Figure 7-3).

7.2.1 Goiás Alkaline Province

The Goiás Alakline Province (“GAP”) is located in Goiás State, at the Paraná Basin border and within the Bom Jardim de Goiás Volcanic Arc and other Precambrian terrains. It encompasses an area of 250 km x 70 km. The province comprises different magma sets with the northern part characterized by alkaline mafic-ultramafic intrusions, sub volcanic intrusions in the central area and volcanic flows in the southern part. The intrusions are disposed in linear arrangements, either parallel to or at different angles with the basin border and occur either inside the basin or just outside of the basin. The province shows similarities and differences in magma type, with some intrusions being carbonatites. However, all intrusions share a very similar geophysical signature with high Bouger anomalies and strong magnetic signal.

The PCH property is located within the northern part of the GAP. This area comprises intrusive alkaline complexes of various sizes and lithologies ranging from dunites and peridotites to diverse pyroxenites, gabbro, alkali-gabbro, nepheline syenite, and fenitization products. The northern intrusives are termed the Morro do Engenho, Santa Fé, Montes Claros de Goiás, Arenópolis, Fazenda Buriti, Córrego dos Bois, and Morro do Macaco. The Córrego dos Bois intrusive is represented by the Vale tenements in the PCH project. The PCH project sits within the northern part of the GAP near the Córrego dos Bois, Morro do Macaco and Fazenda Buriti alkaline intrusives.

The Córrego dos Bois complex is composed of two domes covering an area of approximately 33 km^2. The domes are formed by central dunites, surrounded by wherlites, pyroxenites and websterites (mapped as peridotites). The whole structure is surrounded by a narrow and discontinuous intrusion of nepheline syenite. Dykes of syenite occur in the complex and in country rock. The Morro do Macaco complex comprises four domes composed of dunites, wherlites, olivine pyroxenites and clinopyroxenites. Syenites are found to the west of the domes.

The Fazenda Buriti complex is located approximately 15 km to the NW of Iporá and comprises most of the PCH project. It occupies and area of approximately 35 km^2. The intrusive rocks are olivine clinopyroxenites, melagabbros, essexites, syenogabbros and syenites. Trachyte sills and quartz microsyenites are associated with coarse crystalline rocks.

In the central and southern portions of the GAP dykes, sills and lava flows are found disposed in a linear band striking NW-SE. These structures appear to have been emplaced as fracture fills following similarly oriented faults. The sub-volcanics in the central portion of the GAP and the lava flows in the south are represented by the Amorinópolis, Águas Emendadas and Santo Antônio da Barra formations.

Figure 7-2 Regional Geological Map (PCH Project Location Shown in Yellow Rectangle)

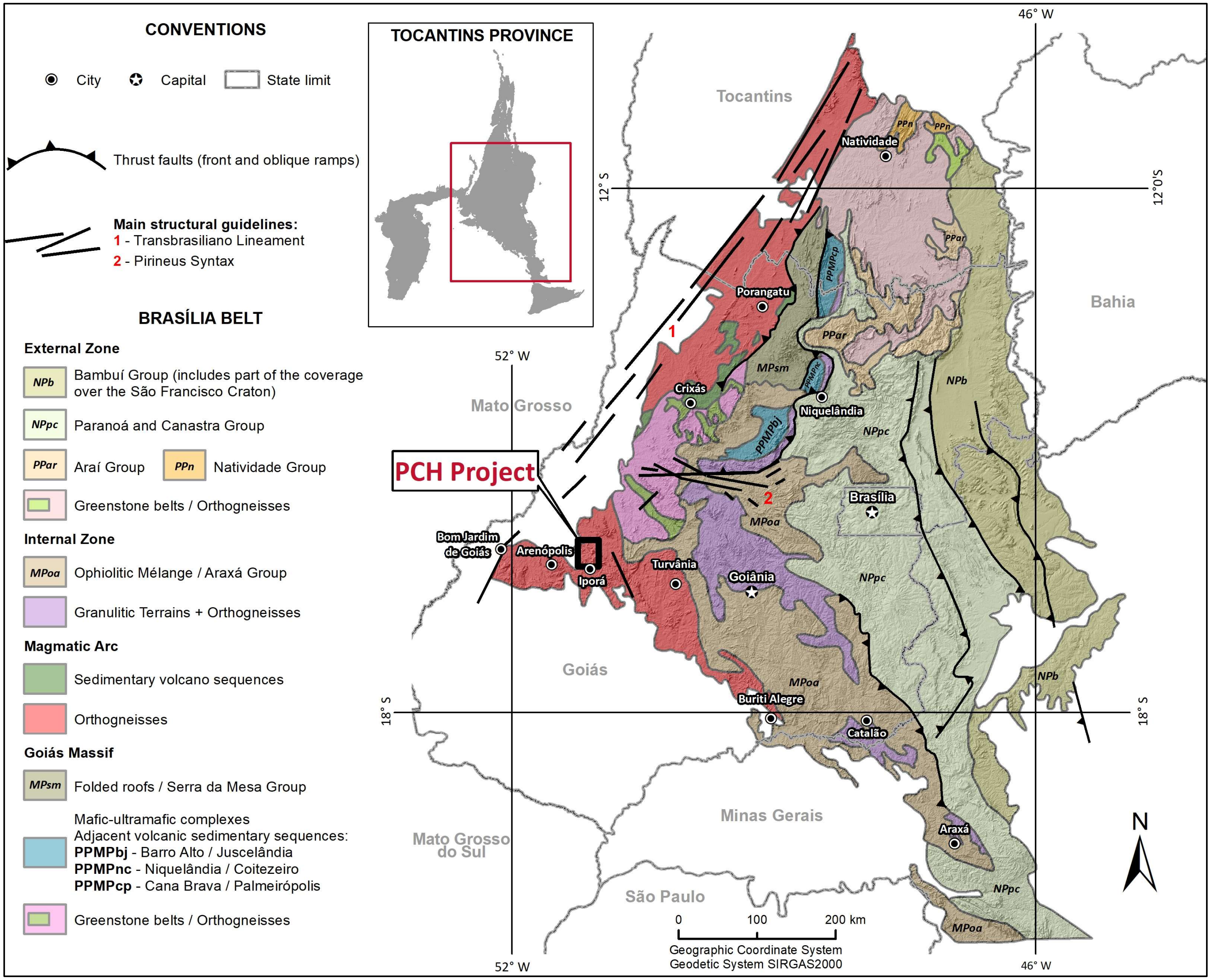
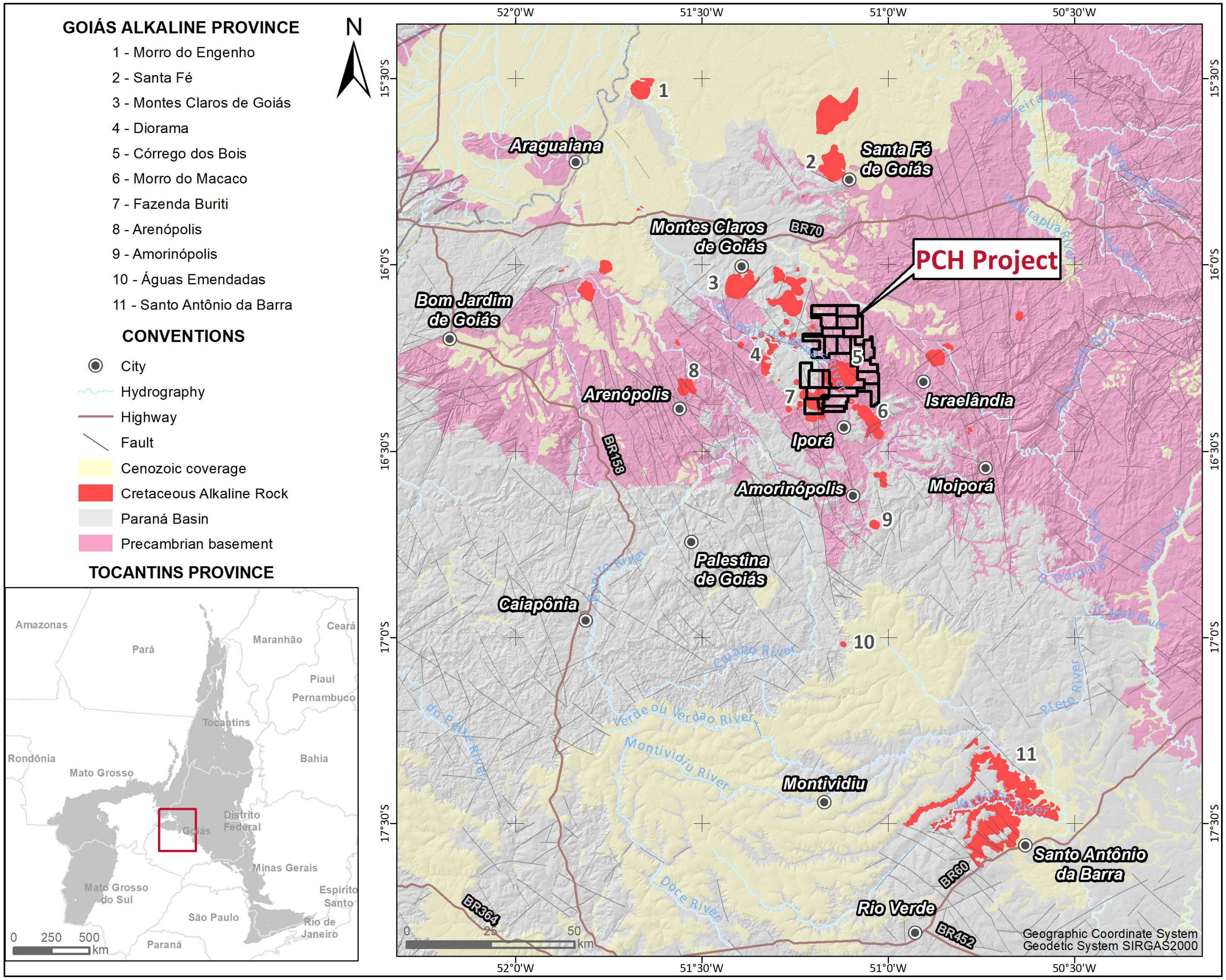


Figure 7-3 Setting of PCH Project Within Northern Alkaline Intrusive Complexes of the GAP



7.3 Property Geology

The local geology of the property is best understood through discussion of the main lithostratigraphic units found on the property (Figure 7-4). These are:

- Ribeirão Santo Antônio Metagranite
- Iporá Granite
- Sedimentary rocks of the Paraná Basin
- Alkaline rocks of the Goiás Alkaline Province
- Surface alteration rocks
- Soils

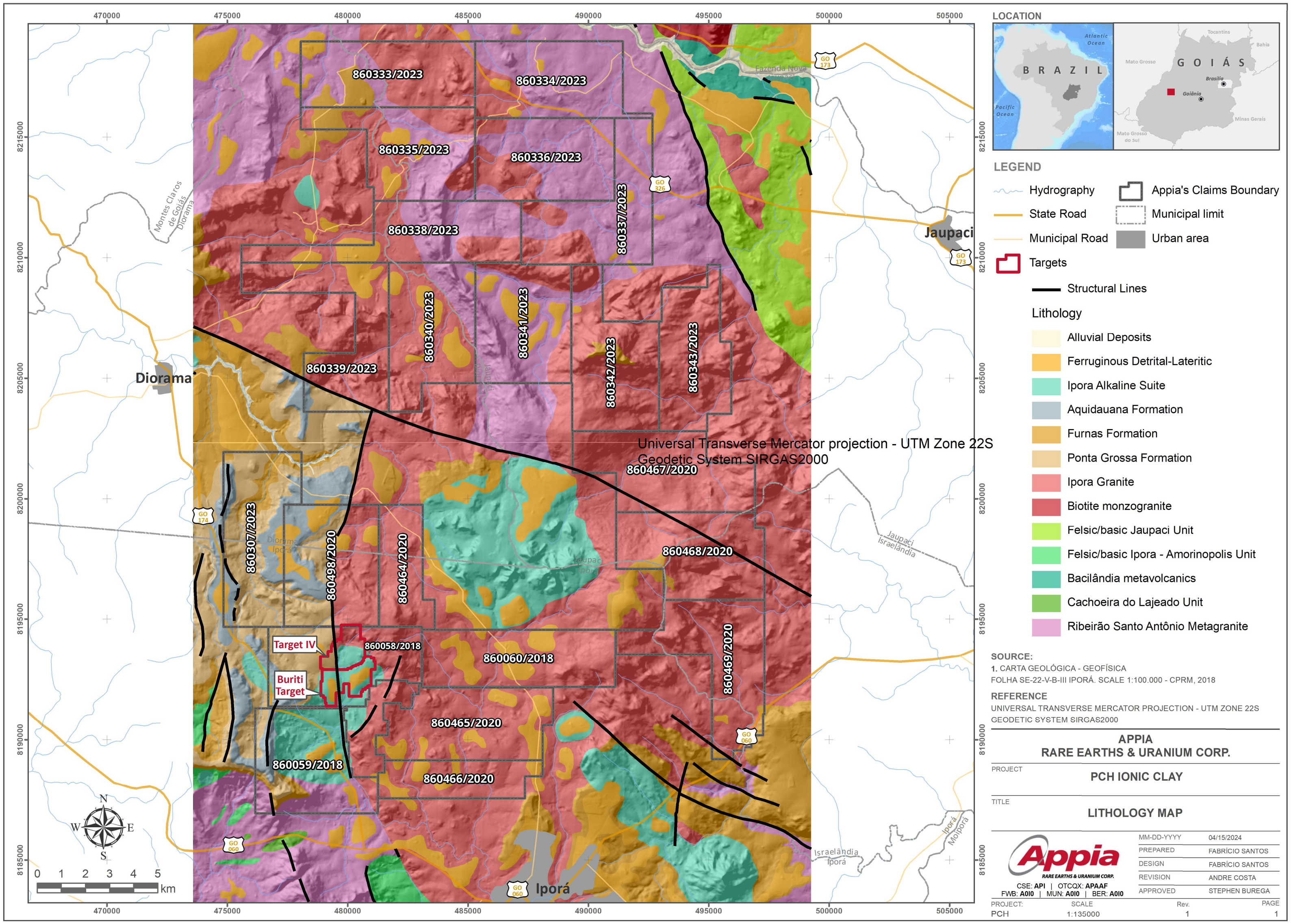
7.3.1 Ribeirão Santo Antônio Metagranite

The Ribeirão Santo Antônio Metagranite is mapped as monzogranites and mylonitized porphyritic meta-syenogranites. The rocks are dated at 688 ± 35 Ma and are the oldest unit in the PCH area. The unit is found outcropping in the southwest portion of the project, making up about 8% of the mapped are, with mylonitic gneisses, metagranites and granitic to tonalitic gneisses. It is intruded by plutonic to volcanic rocks from the GAP and covered by sandstones of the Furnas Formation. Slab outcrops are observed along drainages, as boulders and tilted blocks found in areas with flat to undulating terrain. The unit has a low airborne magnetic geophysical signature and presents a reddish to pink colour in ternary RGB gamma spectrometry, indicating medium to high count values for %K and low to average Th equivalent. The main minerals observed in thin section are perthitic orthoclase, plagioclase, quartz with minor epidote and brown biotite. Accessory minerals include allanite, titanite, chlorite apatite and zircon.

7.3.2 Iporá Granite

The Iporá Granite exhibits the greatest amount of outcropping in the PCH project area, corresponding to about 50% of the mapped area. It is found as blocks, boulders, slab outcrops in meadows and drainages and forming rounded hills in the higher altitude portions of the project area. The granite is characterized by the presence of biotite granites, granodiorites and quartz syenites with little to no deformation and occasional intrusion of centimetric to metric scale alkaline dykes. Outcrops of rock consisting of about 80% magnetite, 15% quartz and 5% hematite have been identified in the middle of the Iporá Granite. These have been classified as magnetite. Rocks produced by surface alteration and mainly composed of quartz, chalcedony and carbonates are also present. Mineralogically, the rocks are composed of varying amounts of quartz, K-feldspar, plagioclase, biotite, hornblende, magnetite and accessory minerals. The rocks have a granular texture with a fine to coarse-grained equigranular fabric and/or porphyritic texture with coarse to very coarse K-feldspar.

Figure 7-4 PCH Property Geology (Excludes Recently Acquired Tenements)



7.3.3 Furnas Formation (Paraná Basin)

The Furnas Formation forms part of the Paraná Basin rocks. It is found in the western portion of the project area and represents about 15% of the mapped area. The Furnas Formation features a smooth to wavy relief with flat hills at the top. Outcrops are typically found as centimetric to decimetric blocks and rarely as outcrops on slopes and drainages. The formation occurs as sedimentary cover in the Ribeirãao Santo Antônio and Iporá Granite and it is intruded by plutonic and subvolcanic rocks from the GAP. The Formation exhibits a low magnetic response and presents as cyan to bluish tones in ternary RGB gamma spectrometry indicating low K, medium U and medium Th. The lithology presents as cream-coloured, beige to purplish sandstones with fine to medium-grain size composed of quartz, micas, feldspars, clay minerals and iron oxide. Bedding planes are typically parallel with stratification.

7.3.4 Goiás Alkaline Province

7.3.4.1 Fazenda Buriti Plutonic Complex

The GAP units hosts the PCH project and comprises different lithologies. The main intrusion of interest is the Fazenda Buriti Complex. The Fazenda Buriti complex occupies an area of 35 km^2. It consists exclusively of plutonic alkaline rocks comprised of clinopyroxenes, melagabbros, syeno-gabbros, olivine syenites, dunites, peridotites, pyroxenites, essexites, teralites, alkaline gabbros, nepheline syenites and hydrothermal alkaline breccia. In addition, the complex includes subvolcanic intrusions and products resulting from fenitization processes.

The intrusive rocks of the Fazenda Buriti complex outcrop sporadically as relatively small boulders in open areas. Outcrops are more common in the southwestern portion of the project area, while in the northeast thick soils predominate and outcrops are scarce. Diamond drill holes in the Target IV area of the Fazenda Buriti complex exhibited oxidized and or completely altered rock profiles down to more than 20 m.

The rocks of the Fazenda Buriti complex typically exhibit coarse to very coarse crystals and a mesocumulatic to orthocumulatic texture. The main mineral are clinopyroxene, plagioclase, coarse-garined magnetite, oxidized, fine-garined olivine, amphibole, alkali feldspar and feldspathoids (nepheline). Compositions range from pryoxenite to alkaline gabbro and nepheline syentite. Meter thick outcrops with igneous bedding exhibiting thick cumulatic pyroxene crystal are found at the base of the layers. Syenites occur as small felsic pockets in the middle of the mafic rocks. Cumulate lithologies are observed in the saprolite in the lower lying portions of the Fazenda Buriti complex. This development is similar to lithologies found in ionic clays at Serra Verde in northern part of Goiás state.

Diamond drilling in the Target IV area (northeast part of the Fazenda Buriti complex) reveals alakline hydrothermal alteration of a breccia containing centimeter size fragments of pyroxenite in a syenite matrix. The hydrothermal alteration is considered to be associated with a carbonatite intrusive event. The hydrothermal alteration is associated with carbonation and sulphidation. Chloritization of mafic minerals such as pyroxene, amphibole and biotite is also observed. The pyroxenite fragments are composed of phenocrysts with augite, magnetite (partially altered to ilmenite), trace pyrite, and minor Fe/Ti oxides, biotite, apatite, carbonates and zeolite. The breccia can contain elevated levels of rare earth minerals and niobium. Figure 9 illustrates a typical section of core observed in drill hole PCH-01.

7.3.4.2 Rio dos Bois Plutonic Intrusion

The Rio dos Bois plutonic intrusion occurs in the northwest portion of the project are and represents about 3% of the total mapped area. No outcrops are observed, and the area is mostly flat terrain currently used for pasture and grain crops. The intrusion is composed of altered mafic to ultramafic rocks (dunites and pryroxenites), with the soils being enriched in magnetite and a distinct red to dark brown colour. The intrusion is differentiated from bordering contacts by a low ternary radiometric signal which presents as cyan in the ternary radiometric map.

7.3.4.3 Subvolcanic intrusions

Subvolcainc intrusions present as sills ranging in length from 2 km to 5 km and composition from syenite to trachyte and as phonolite, trachyte and lamprophyre dykes outcropping throughout the extension of the PCH project area.

Microsyenite occurs in the extreme western portion of the project, intruding sandstones of the Paraná Basin. It is observed in magnetometry survey data as a low magnetic signature and pink in the ternary radiometric data, with average values of K, and low U and Th values.

7.3.4.4 Trachyte

Trachyte is mapped in the northwest of the PCH area and intrudes sandstones of the Paraná Basin. It has low magnetism and presents as light pink in the ternary radiometric data, indicating average K and low U and Th counts. Outcrops are found in the form of small blocks occasional slabs. The main minerals are euhedral feldspar phenocrysts and fine to medium grained pyroxene with interstitial biotite in a fine to very fine matrix.

7.3.4.5 Phonolith, Trachyte, Lamprophyre and Microsyenite dykes

These alkaline dykes are present with dimension varying form a few centimeters to tens of meters intruding all the geological units of the PCH project area. They are porphyritic in texture with fine to coarse phenocrysts in a very fine to aphanitic matrix. They are composed of variable amounts of feldspar (plagioclase or K-spar), amphibole and pyroxene and consist primarily of alkaline phonolith (nepheline) or alkaline diabase.

7.3.5 Surface alteration rocks

Surface alteration rocks are found as domains in the Iporá Granite and Fazenda Buriti Complex. They are formed by superficial and/or supergene alteration processes and are found in either magnetic or non-magnetic form. They are characterized by the presence of chalcedony, calcite and quartz.

7.3.6 Soils

Three major soil types are found in the project area:

- Magnetic reddish-brown dark brown soil: mainly associated with mafic and ultramafic intrusions. Very strong magnetism
- Brown to dark brown sandy to clayey-sand soil: brown to dark brown, usually very friable and sandy. Little to no magnetism with presence of quartz and little to no iron. Darker colour indicates presence of organic matter Beige to light brown sandy to clayey sandy soil
- Beige to light brown sandy to clayey-sand soil: Mainly found in areas where Furnas Formation sandstone outcrop. Generally, very sandy and friable. Little to no magnetism.

7.4 GEOLOGY OF TARGET IV of PCH PROJECT

Target IV of the PCH project has been subject to the most active exploration program, including geophysical surveys (radiometric, ground magnetics and aeromagentics), geochemical sampling, auger drilling, diamond drilling and trenching. The geology of Target IV is mapped as illustrated in Figure 7-5. The northern half of the target is underlain by the Iporá Granite with carbonatite (phosphate intrusion) and detrital-alluvial cover, while the southern half is underlain by gabbros of the GAP with overlying detrital-alluvial cover. Sandstones of the Paraná Basin Formation are found in the southwest of the target area.

Figure 7-5 Geology of Target IV, PCH Project (Showing Auger Holes, Drill Holes and Trench Locations)

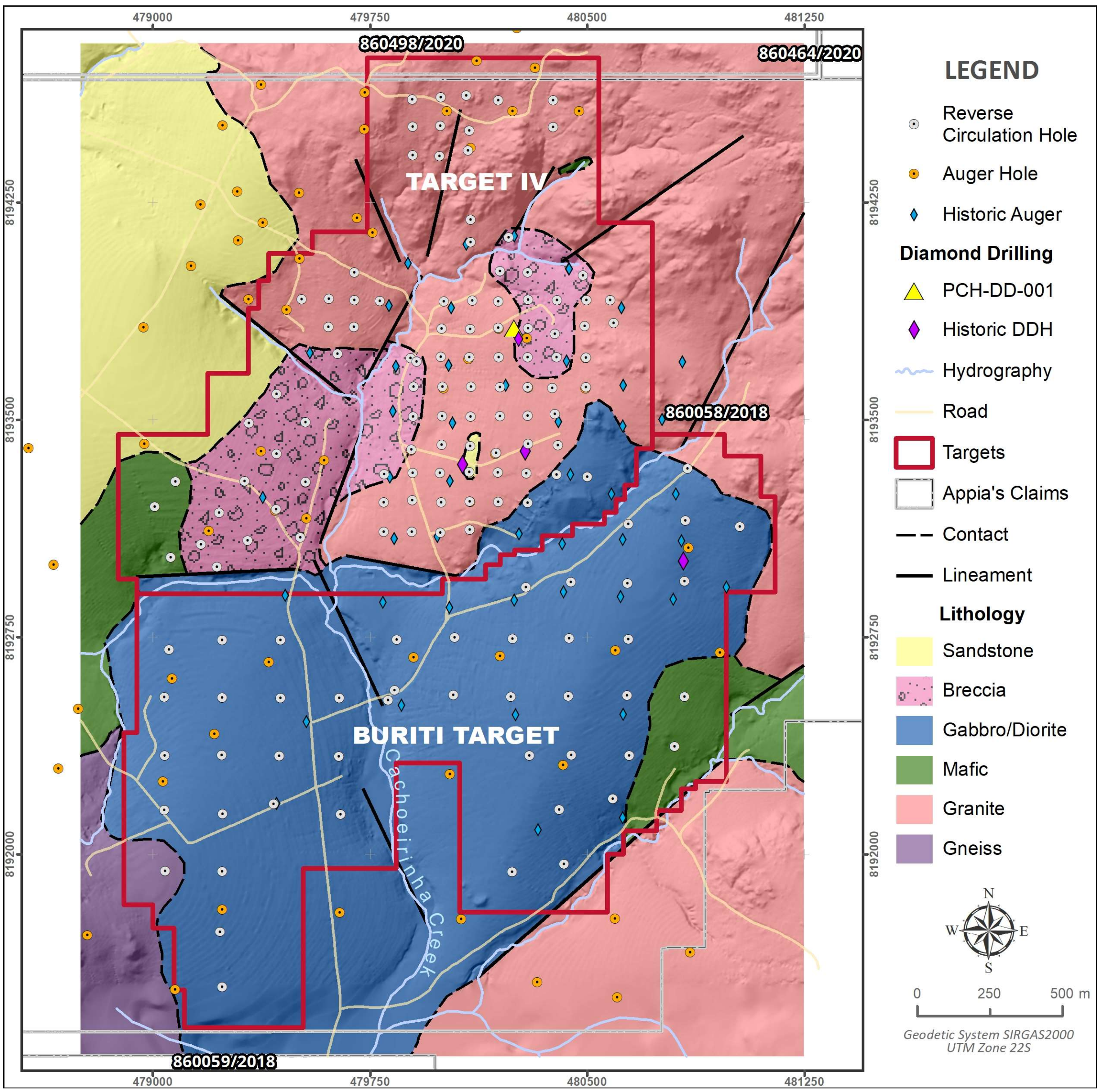


Figure 6-2 and Figure 6-3 show the total Count (TC) and Th radiometric signals for Target IV. Radiometric highs are associated with development over the Iporá Granite and the gabbroic breccia underlying Holes F01 and F02. These data are indicative of rare earth mineralization.

7.5 Mineralization on the PCH Project

Alkaline and alkaline-carbonatitic complexes are known as potential multi-commodity deposits and as one of the main sources of rare earth elements and niobium. In Brazil, such complexes are present at Araxa and Catalão and primarily mined for niobium and phosphate but have also been explored for rare earths exhibiting ionic clay development. At Serra Verde, carbonatite development is not present but intense weathering of the alkaline granites has resulted in development of ionic clays in the upper reaches of the deposit. The PCH project exhibits features of both secondary rare earth enrichment from intense weathering of alkali granites and carbonatite intrusion and primary rare earth mineralization in the alkali granites and associated hydrothermal/alkali metasomatism of the alkali granites resulting from carbonatite intrusion. There are at least two horizons at the PCH project:

- An oxidized horizon reaching depths up to 26 m and enriched in rare earths, especially the upper 8 m – 10 m; and,
- Unaltered rock breccia containing primary rare earth minerals and niobium down to at least 100 m depth.

The primary rare earth containing minerals are monazite ($(REE,Th)PO_4$), bastnaesite ($(REE)(CO_3)F$), and fluorapatite ($(Ca,REE,Na)_5(PO_4)_3(F,OH)$). Cebaite ($(Ce)[Ba_3Ce_2(CO_3)_5F_2]$ and other Ce-Ba-Sr-Nd containing minerals appear to be additional sources of cerium and neodymium. Niobium is primarily found in lueshite ($NaNbO_3$) and as niobium apatite. A resistivity survey at Target IV identified a potential VMS occurrence located approximately 150 m below surface and extending to approximately 350 m depth below surface. Drilling indicated at shallower depths, the N and NW protions are enriched in TREO in Target IV when compared to the Buriti Target. Buriti Target presents TREO enrichment at deeper depths and presents anomalous grades of Scandium and Cobalt.

Target IV represents a unique high-grade critical REE mineralization zone, with the southwest quadrant displaying exceptional drill results, further details available. Appia's new Scandium and Cobalt discovery zone, Buriti (south of Target IV) revealed substantial findings in hole PCH-RC-116, from surface to 24 metres and remains open at depth.

8 DEPOSIT TYPES

8.1 Mineralization Models

Carbonatites and other alkaline intrusive complexes, as well as their weathering products, are considered a primary source of Rare Earth Element (REE), and Regolith-Hosted Deposits. The vast majority of carbonatites are intrusive igneous bodies with few exceptions (Clay and Akroyd, 2013).

Broadly speaking, alkaline rocks are deficient in SiO_2 relative to Na_2O, K_2O, and CaO. Although the International Union of Geological Sciences defines carbonatites as igneous rocks containing more than 50 modal percent (%) primary carbonate minerals, recent research argues for a classification system where the precise amount of carbonate present is less important than the fact that a suite of carbonate-bearing rocks is derived from the same magma (Clay and Akroyd, 2013).

8.1.1 REE Model

Carbonatites contain elevated concentrations of REEs. It is important to note that the source of the REEs is the initial magma. The principal REE-bearing minerals associated with carbonatites are fluocarbonates (bastnaesite, parasite, and synchysite), hydrated carbonates (ancylite), and phosphates (monazite and apatite) (Clay and Akroyd, 2013).

There are several common characteristics with regards to carbonatite which are described below. Many of these characteristics apply to alkaline REE as well namely:

- the surrounding rocks are often hydrothermally altered by alkali-metasomatism;
- they contain a variety of ore minerals;
- the significant REE-bearing ore minerals include bastnaesite, monazite, and xenotime;
- they tend to occur within a stable continental tectonic unit and are generally associated with intracontinental rift and fault systems. This is typical of the location of Araxá along the AZ125° lineament and on the edge of the Paranaiba Craton; and
- carbonatites are more enriched in LREEs than alkaline deposits.

REEs do not naturally occur as free metals in nature, but rather as a wide range of mineral compounds such as halides, carbonates, oxides, phosphates, and silicates (Walters et al., 2011). REE minerals typically occur in combinations that tend to be biased towards either the LREEs or HREEs. The elemental forms of REEs are iron-grey to silvery lustrous metals, which are typically soft, malleable, ductile, and usually react rapidly by forming REE oxides (Clay and Akroyd, 2013).

REE-enriched mineral deposits are divided into primary and secondary deposits. Primary deposits are associated with igneous and hydrothermal processes (Clay and Akroyd, 2013), while secondary deposits are associated with sedimentary and weathering processes of primary deposits.

8.1.2 REE Ionic Adsorption Clay Style Deposit

The PCH project shows a regolith profile reminiscent of the rare earth ionic adsorption clay-style deposits. The typical profile for these deposits is shown in Figure 8-1. A few of the profiles encountered in the projects drillholes are shown in Figure 8-2, Figure 8-3 and Figure 8-4.

Rare earth ionic adsorption clay-style deposits, often referred to as ion-adsorption or lateritic deposits, are a significant source of heavy rare earth elements (HREEs). These deposits are predominantly found in Southern China with some examples in southern hemisphere (Brazil, Africa).

These deposits are formed through the intense weathering of granitic rocks, usually in subtropical climates where high rates of weathering can occur. The rare earth elements are leached from the parent rock and absorbed onto the surfaces of clay minerals within the soil. This adsorption is made possible by the highly ionic nature of these elements, which allows them to be readily taken up and held by the clay.

The clay in these deposits is typically a type of kaolin or laterite, both of which have the ability to adsorb large amounts of rare earth ions. The REEs are not incorporated into the crystal lattice of the minerals but are adsorbed onto the surface of the mineral particles. This makes them relatively easy to extract compared to other types of REE deposits.

Ionic clay-style deposits are especially important because they are rich in heavy rare earth elements (HREEs), which are more valuable and less abundant than the light rare earth elements (LREEs). These include elements like dysprosium and terbium, which are essential for many high-tech applications, including wind turbines, hybrid vehicles, and defense technologies.

The extraction from these deposits is typically done using heap leaching, a process where a chemical solution is used to dissolve the rare earth ions from the clay. While this method is relatively low-cost and less impactful than traditional mining methods, it can lead to significant environmental issues if not properly managed, such as water contamination and soil degradation.

Figure 8-1 Typical Profile of Regolith-hosted Ionic Clay REE Deposits

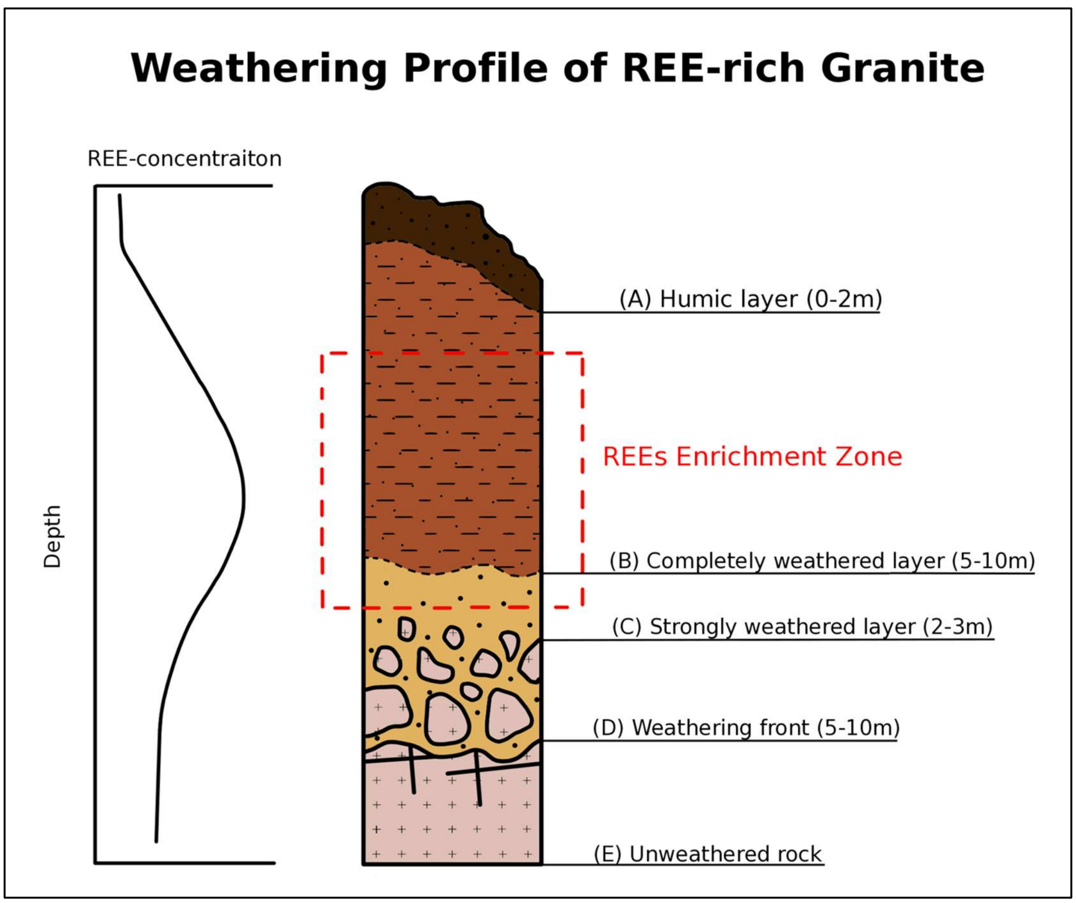


Figure 8-2 Strip Log from Hole PCH-RC-008

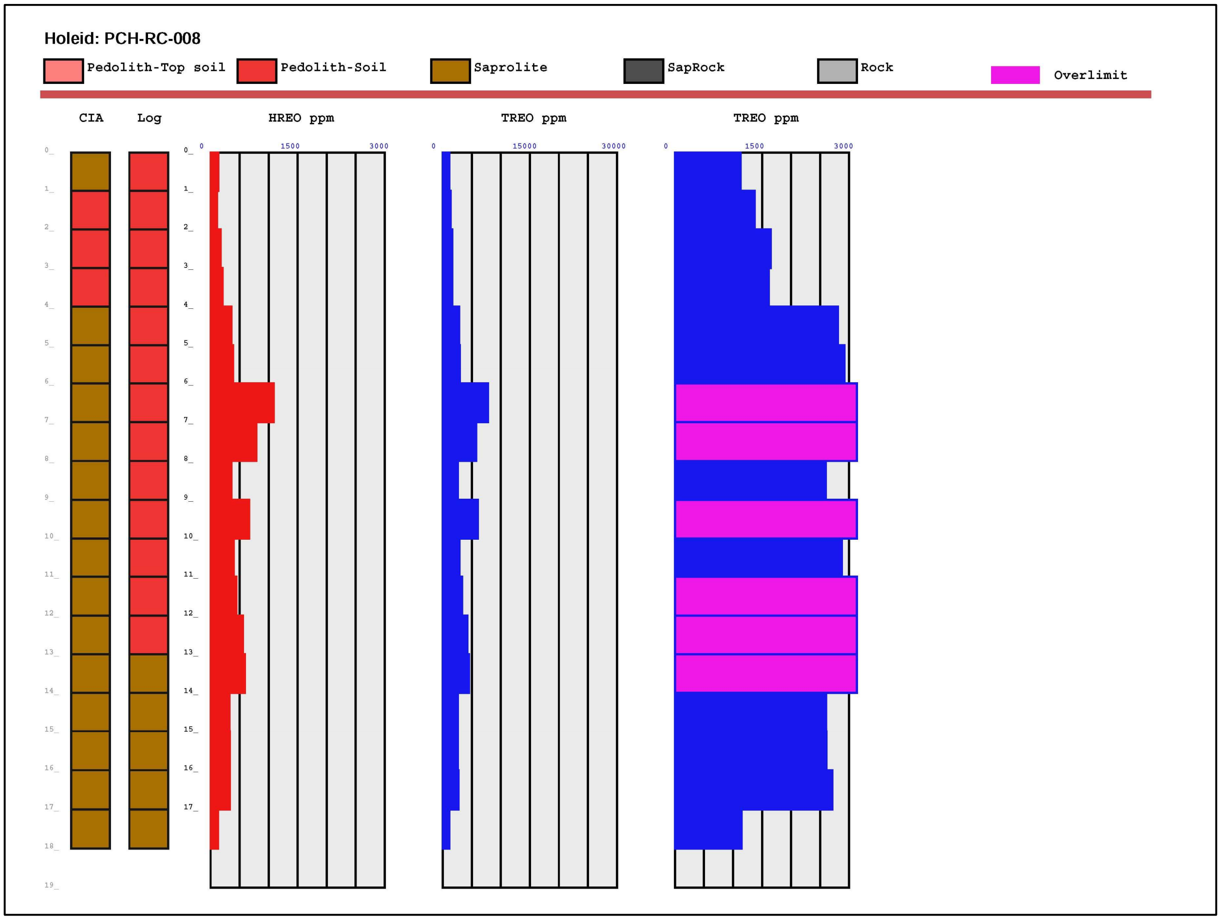


Figure 8-3 Strip Log from Hole PCH-RC-055

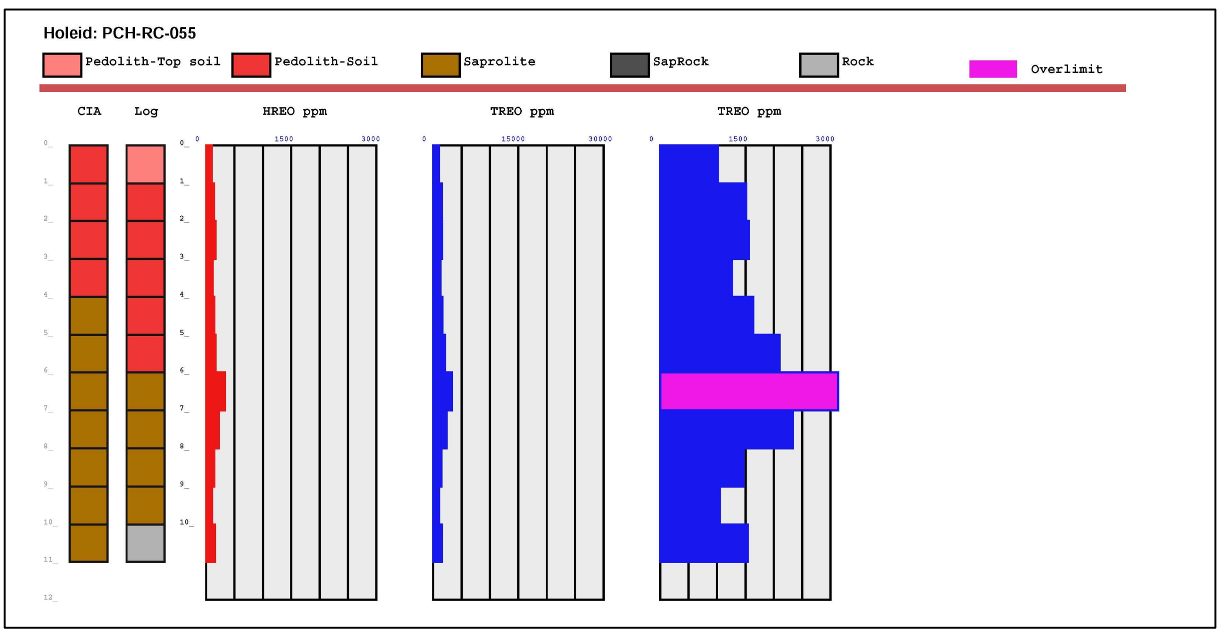
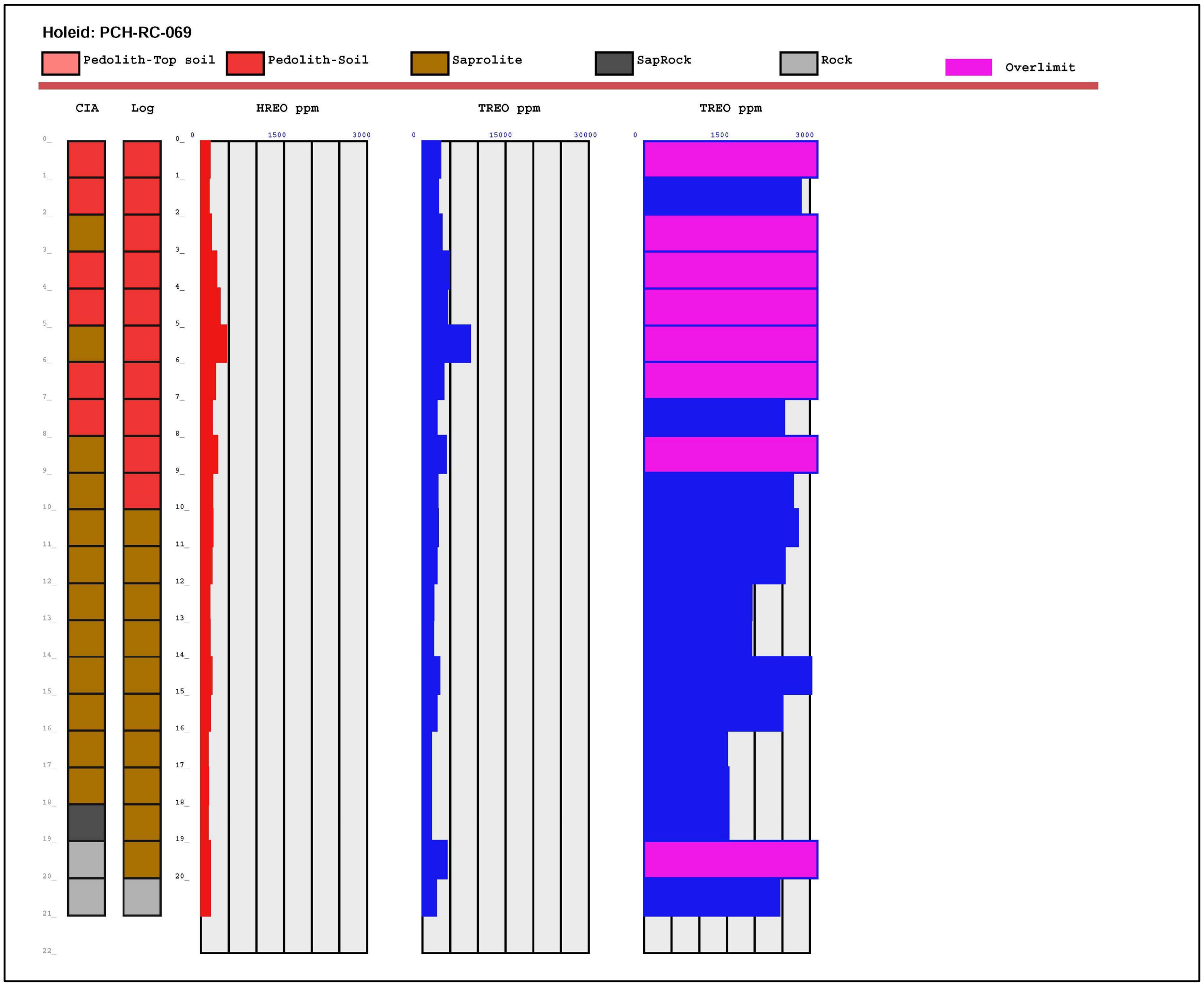


Figure 8-4 Strip Log from Hole PCH-RC-069



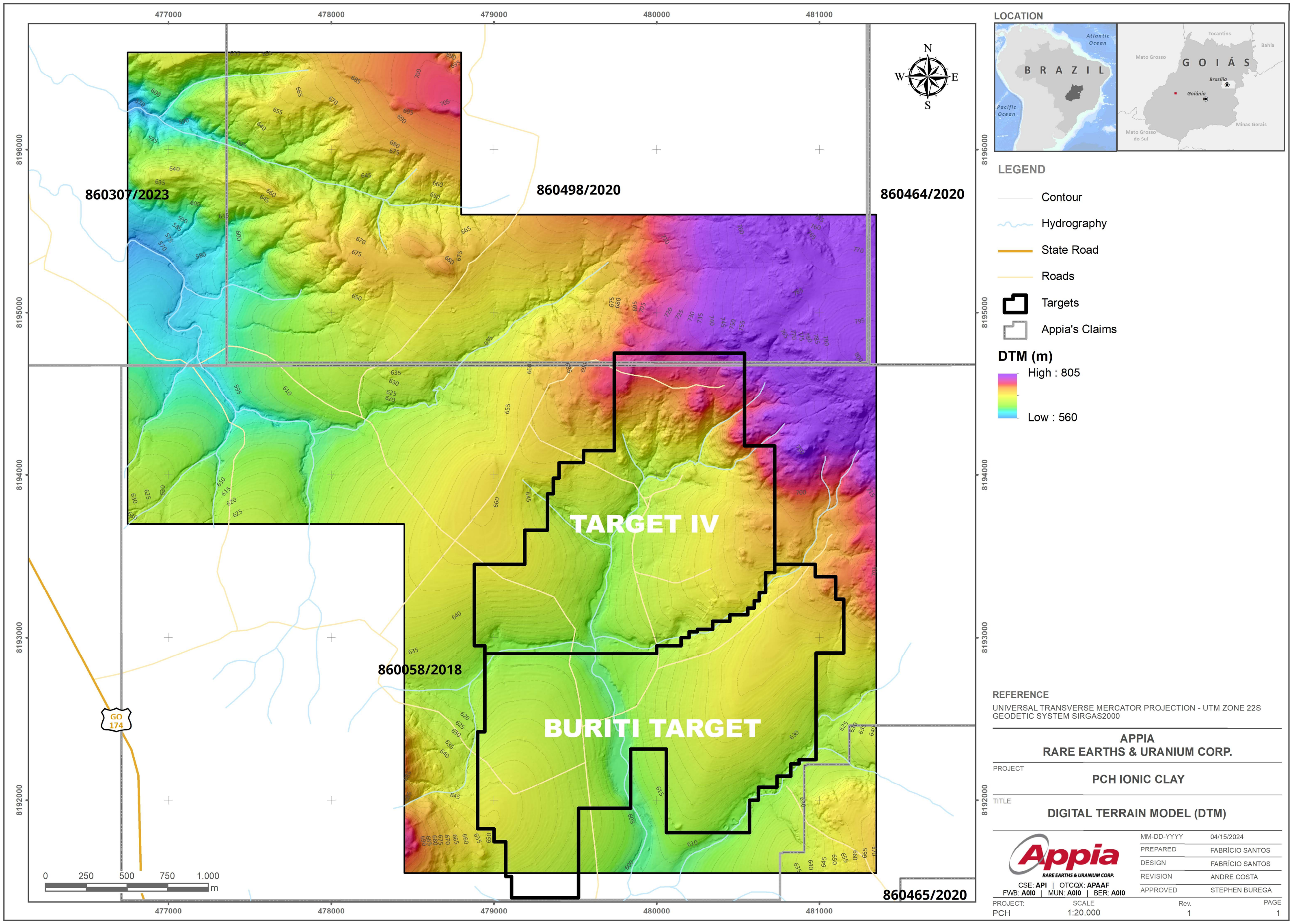
9 EXPLORATION

Appia conducted detailed geological mapping in 2023.

Exploration at the PCH project has included a high-definition LiDAR and Orthophoto survey.

Appia contracted Metro Cúbico Engenharia LTDAA to conduct a high-definition LiDAR and Orthophoto survey on the PCH Project from July 15, 2023, to September 21, 2023. The survey included laser profiling with the Matrice 350 RTK drone and Zenmuse Le, a high-precision IMU system and RGB camera with 4/3 CMOS and covered an area of 1,702.50 hectares. Figure 9-1 displays a digital terrain model generated by the LIDAR survey.

Figure 9-1 Digital Terrain Model (DTM) with Shaded Relief and Target IV Boundary



10 DRILLING

Appia drilled a total of 3,255.8 meters in a total of 290 holes on the Property. A summary of drill hole location data is presented in Appendix A. A total of 243.5 meters was drilled in one diamond drill hole (PCH-DD-001). The diamond drill hole tested a strong magnetic anomaly at depth within the alkali breccia zone. A total of 993.3 meters was drilled in 142 Auger holes (PCH-AH-001 to PCH-AH-140 and PCH-AH-TT1 to PCH-AH-TT3). The Auger holes have a final depth of 2.0 to 13.0 meters. A total of 2,019.0 meters in 147 Reverse Circulation (RC) drill holes (PCH-RC-001 to PCH-RC-147). The RC holes were drilled vertically and have a final depth of 2 to 33 meters. Drill hole highlights are presented in Table 10-1 and drill hole locations are presented in Figure 10-1 (DDH and RC) and Figure 10-2 (Auger Holes).

The weathered profile along the diamond drill hole PCH-DDH-001 extended to approximately 20 meters of true thickness yielding concentrations of 5,548 ppm or 0.55% Total Rare Earth Oxide (TREO), 1,420 ppm or 0.14% Magnet Rare Earth Oxide (MREO). Drill hole results are presented in Table 10-1. The results confirm the ultra-high-grade nature of the upper levels, including concentrations reaching up to 22,339 ppm or 2.23% TREO, 6,204 ppm or 0.62% MREO, and 2,074 ppm or 0.21% Heavy Rare Earth Oxide (HREO) across 2 metres from a depth of 2 m to 4 m.

Table 10-1 Diamond Drill Hole PCH-DDH-001 (Assays in PPM)

Interval	0-22.25 m	with 0-9 m	with 2-4 m	25.50-52 m	58-140 m	164.30-243.25 m	0-243.25 m
TREO	5,548	10,247	22,339	2,019	1,648	1,369	1,901
MREO	1,420	2,672	6,204	481	378	329	457
LREO	5,088	9,380	20,265	1,876	1,538	1,255	1,757
HREO	460	867	2,074	143	109	115	143
Magnet REO							
Interval	**0-22.25 m**	**with 0-9 m**	**with 2-4 m**	**25.50-52 m**	**58-140 m**	**164.30-243.25 m**	**0-243.25 m**
Nd_2O_3	909	1,710	3,956	317	247	208	295
Pr_6O_{11}	271	510	1,173	89	74	63	88
Sm_2O_3	141	264	614	45	36	34	45
Dy_2O_3	84	159	392	25	17	20	25
Tb_4O_7	15	28	69	5	3	4	5
Light – LREO							
Interval	**0-22.25 m**	**with 0-9 m**	**with 2-4 m**	**25.50-52 m**	**58-140 m**	**164.30-243.25 m**	**0-243.25 m**
La_2O_3	1,349	2,471	5,359	499	432	338	477
CeO_2	2,559	4,689	9,776	970	785	645	897
Pr_6O_{11}	271	510	1,173	89	74	63	88
Nd_2O_3	909	1,710	3,956	317	247	208	295
Heavy – HREO							
Interval	**0-22.25 m**	**with 0-9 m**	**with 2-4 m**	**25.50-52 m**	**58-140 m**	**164.30-243.25 m**	**0-243.25 m**
Sm_2O_3	141	264	614	45	36	34	45
Eu_2O_3	40	75	177	13	10	9	12
Gd_2O_3	109	206	496	33	26	27	34
Tb_4O_7	15	28	69	5	3	4	5
Dy_2O_3	84	159	392	25	17	20	25
Ho_2O_3	14	27	66	4	3	3	4
Er_2O_3	35	66	161	11	7	9	11
Tm_2O_3	4	7	16	1	1	1	1
Yb_2O_3	18	32	76	6	5	7	7
Lu_2O_3	2	3	7	1	1	1	1

Two auger holes returned a total weighted average of 10,249 ppm or 1.02% TREO, including:

- PCH-AH-29 from 0 to 7m EOH: 4,122 ppm or 0.41% TREO, 1,066 ppm or 0.11% MREO, 361 ppm or 0.04% HREO, and 3,762 ppm or 0.38% Light Rare Earth Oxides (LREO).
- PCH-AH-30 from 0 to 7m EOH: 16,375 ppm or 1.64% TREO, 2,955 ppm or 0.30% MREO, 457 ppm or 0.05% HREO, and 15,918 ppm or 1.59% Light Rare Earth Oxides (LREO).

RC drill hole highlights are presented in Table 10-2. RC Drill hole PCH-RC-063 was sent for further analyses by SGS Geosl Labs, using method IMS95RS. The updated assays reveal a very significant 42.2% increase in Total Rare Earth Oxides (TREO) and a notable 9.2% increase in Magnet Rare Earth Oxides (MREO). Of particular significance is the high-grade 2 meter (m) intercept from 10 m to 12 m, showing 92,758 ppm (Parts Per Million) or 9.28% TREO, with 13,798 ppm or 1.38% MREO, and 2,241 ppm or 0.22% Heavy Rare Earth Oxide (HREO), and 90,516 ppm or 9.05% Light Rare Earth Oxide (LREO).

Table 10-2 RC Drill Hole Highlights

Hole ID	From	To	Width	TREO	MREO	HREO	MREO / TREO	HREO / TREO
PCH-RC-001	0.00	15.00	15.00	1,915	510	292	27%	15%
Including	2.00	11.00	9.00	2,300	632	366	27%	16%
PCH-RC-002	0.00	15.00	15.00	2,671	606	220	23%	8%
Including	8.00	14.00	6.00	5,389	1,190	412	23%	8%
PCH-RC-003	0.00	11.00	11.00	488	132	68	27%	14%
PCH-RC-004	0.00	10.00	10.00	427	115	61	27%	14%
PCH-RC-005	0.00	15.00	15.00	518	143	70	28%	14%
PCH-RC-006	0.00	15.00	15.00	383	105	55	27%	14%
PCH-RC-007	0.00	14.00	14.00	943	250	119	26%	13%
PCH-RC-008	0.00	18.00	18.00	2,752	741	404	27%	15%
Including	2.00	17.00	15.00	3,084	839	460	27%	15%
PCH-RC-009.	0.00	15.00	15.00	3.277	805	252	25%	8%
Including	1.00	13.00	12.00	3,594	886	275	24%	8%
PCH-RC-010	0.00	12.00	12.00	1,050	260	101	25%	10%
PCH-RC-011	0.00	15.00	15.00	3,717	913	286	25%	8%
Including	0.00	11.00	11.00	4,182	1,035	327	25%	8%
PCH-RC-012	0.00	11.00	11.00	867	216	89	25%	10%
Including	0.00	2.00	2.00	1,557	308	112	20%	7%
PCH-RC-013	0.00	14.00	14.00	1,039	226	73	22%	7%
Including	0.00	6.00	6.00	1,280	275	90	24%	8%
PCH-RC-014	0.00	12.00	12.00	804	192	71	24%	9%
Including	1.00	5.00	4.00	1,408	310	111	22%	8%
PCH-RC-015	0.00	13.00	13.00	1,530	393	156	26%	10%
Including	0.00	9.00	9.00	1,824	485	196	29%	12%
PCH-RC-016	0.00	9.00	9.00	1,077	258	102	24%	10%
Including	0.00	6.00	6.00	1,362	320	123	26%	10%
PCH-RC-017	0.00	9.00	9.00	1,550	313	110	20%	7%
PCH-RC-018	0.00	18.00	18.00	1,677	363	112	22%	7%
Including	2.00	14.00	12.00	1,812	395	122	22%	7%
PCH-RC-019	0.00	5.00	5.00	1,655	384	127	23%	8%
PCH-RC-020	0.00	7.00	7.00	1,001	217	81	23%	9%
Including	0.00	2.00	2.00	1,327	219	81	17%	6%
PCH-RC-021	0.00	18.00	18.00	1,005	229	79	25%	9%
Including	6.00	14.00	8.00	1,378	296	91	21%	8%

Hole ID	From	To	Width	TREO	MREO	HREO	MREO / TREO	HREO / TREO
PCH-RC-022	0.00	16.00	16.00	560	161	79	29%	15%
PCH-RC-023	0.00	15.00	15.00	1,287	320	140	25%	11%
Including	3.00	15.00	12.00	1,402	347	155	25%	11%
PCH-RC-024	0.00	10.00	10.00	862	198	64	23%	7%
Including	5.00	7.00	2.00	1,238	275	74	22%	6%
PCH-RC-025	0.00	16.00	16.00	549	138	56	25%	10%
PCH-RC-026	0.00	21.00	21.00	1,042	222	85	21%	8%
Including	17.00	19.00	2.00	3,452	651	159	19%	5%
PCH-RC-027	0.00	15.00	15.00	1,080	235	101	22%	9%
Including	0.00	6.00	6.00	1,621	312	121	19%	7%
PCH-RC-028	0.00	14.00	14.00	685	174	88	25%	13%
PCH-RC-029	0.00	16.00	16.00	685	181	84	26%	12%
Including	1.00	4.00	3.00	1,229	240	99	20%	8%
PCH-RC-030	0.00	15.00	15.00	469	138	67	29%	14%
PCH-RC-031	0.00	14.00	14.00	597	157	67	26%	11%
PCH-RC-032	0.00	12.00	12.00	431	127	69	29%	16%
PCH-RC-033	0.00	15.00	15.00	446	120	65	28%	15%
PCH-RC-034	0.00	13.00	13.00	1,432	359	140	25%	10%
Including	8.00	12.00	4.00	2,955	739	284	25%	10%
PCH-RC-035	0.00	5.00	5.00	2,366	426	124	18%	5%
PCH-RC-036	0.00	5.00	5.00	1,272	278	99	22%	8%
PCH-RC-037	0.00	9.00	9.00	1,444	308	102	21%	7%
PCH-RC-038	0.00	10.00	10.00	1,081	182	59	17%	6%
Including	7.00	10.00	3.00	1,449	210	56	14%	4%
PCH-RC-039	0.00	27.00	27.00	2,164	508	137	23%	7%
Including	2.00	5.00	3.00	1,303	256	90	20%	7%
Including	6.00	27.00	21.00	2,454	588	153	24%	6%
PCH-RC-040	0.00	15.00	15.00	3,900	884	229	22%	7%
Including	3.00	6.00	3.00	7,984	1,858	398	23%	5%
Including	10.00	15.00	5.00	4,329	983	267	23%	6%
PCH-RC-041	0.00	11.00	11.00	671	179	69	27%	10%
PCH-RC-042	0.00	11.00	11.00	671	157	63	24%	10%
PCH-RC-018	0.00	18.00	18.00	1,677	363	112	22%	7%
Including	2.00	14.00	12.00	1,812	395	122	22%	7%
PCH-RC-019	0.00	5.00	5.00	1,655	384	127	23%	8%
PCH-RC-020	0.00	7.00	7.00	1,001	217	81	23%	9%
Including	0.00	2.00	2.00	1,327	219	81	17%	6%
PCH-RC-021	0.00	18.00	18.00	1,005	229	79	25%	9%
Including	6.00	14.00	8.00	1,378	296	91	21%	8%
PCH-RC-022	0.00	16.00	16.00	560	161	79	29%	15%
PCH-RC-023	0.00	15.00	15.00	1,287	320	140	25%	11%
Including	3.00	15.00	12.00	1,402	347	155	25%	11%
PCH-RC-024	0.00	10.00	10.00	862	198	64	23%	7%
Including	5.00	7.00	2.00	1,238	275	74	22%	6%
PCH-RC-025	0.00	16.00	16.00	549	138	56	25%	10%
PCH-RC-026	0.00	21.00	21.00	1,042	222	85	21%	8%
Including	17.00	19.00	2.00	3,452	651	159	19%	5%
PCH-RC-027	0.00	15.00	15.00	1,080	235	101	22%	9%
Including	0.00	6.00	6.00	1,621	312	121	19%	7%

Hole ID	From	To	Width	TREO	MREO	HREO	MREO / TREO	HREO / TREO
PCH-RC-028	0.00	14.00	14.00	685	174	88	25%	13%
PCH-RC-029	0.00	16.00	16.00	685	181	84	26%	12%
Including	1.00	4.00	3.00	1,229	240	99	20%	8%
PCH-RC-030	0.00	15.00	15.00	469	138	67	29%	14%
PCH-RC-031	0.00	14.00	14.00	597	157	67	26%	11%
PCH-RC-032	0.00	12.00	12.00	431	127	69	29%	16%
PCH-RC-033	0.00	15.00	15.00	446	120	65	28%	15%
PCH-RC-034	0.00	13.00	13.00	1,432	359	140	25%	10%
Including	8.00	12.00	4.00	2,955	739	284	25%	10%
PCH-RC-035	0.00	5.00	5.00	2,366	426	124	18%	5%
PCH-RC-036	0.00	5.00	5.00	1,272	278	99	22%	8%
PCH-RC-037	0.00	9.00	9.00	1,444	308	102	21%	7%
PCH-RC-038	0.00	10.00	10.00	1,081	182	59	17%	6%
Including	7.00	10.00	3.00	1,449	210	56	14%	4%
PCH-RC-039	0.00	27.00	27.00	2,164	508	137	23%	7%
Including	2.00	5.00	3.00	1,303	256	90	20%	7%
Including	6.00	27.00	21.00	2,454	588	153	24%	6%
PCH-RC-040	0.00	15.00	15.00	3,900	884	229	22%	7%
Including	3.00	6.00	3.00	7,984	1,858	398	23%	5%
Including	10.00	15.00	5.00	4,329	983	267	23%	6%
PCH-RC-041	0.00	11.00	11.00	671	179	69	27%	10%
PCH-RC-042	0.00	11.00	11.00	671	157	63	24%	10%
PCH-RC-093	0.00	22.00	22.00	565	194	78	35%	14%
PCH-RC-094	0.00	20.00	20.00	719	182	65	26%	9%
Including	12.00	19.00	7.00	559	145	56	26%	10%
PCH-RC-095	0.00	21.00	21.00	746	209	74	28%	10%
PCH-RC-096	0.00	14.00	14.00	547	159	58	31%	11%
Including	7.00	12.00	5.00	368	122	47	33%	13%
PCH-RC-097	0.00	15.00	15.00	546	165	72	31%	13%
PCH-RC-098	0.00	17.00	17.00	777	224	88	29%	11%
Including	7.00	15.00	8.00	895	277	108	32%	13%
Including	13.00	15.00	2.00	1.41	361	143	26%	10%
PCH-RC-099	0.00	18.00	18.00	672	210	103	32%	15%
Including	4.00	15.00	11.00	566	190	89	34%	16%
PCH-RC-100	0.00	14.00	14.00	811	229	106	28%	13%
Including	2.00	4.00	2.00	1.25	328	220	26%	18%
PCH-RC-101	0.00	3.00	3.00	685	181	67	27%	10%
PCH-RC-102	0.00	12.00	12.00	1.27	327	105	27%	8%
PCH-RC-103	0.00	6.00	6.00	573	162	76	28%	13%
PCH-RC-104	0.00	7.00	7.00	727	200	75	28%	10%
PCH-RC-105	0.00	4.00	4.00	950	199	78	21%	8%
PCH-RC-106	0.00	6.00	6.00	429	113	59	26%	14%
PCH-RC-107	0.00	8.00	8.00	434	135	68	31%	16%
PCH-RC-108	0.00	10.00	10.00	828	255	91	31%	11%
PCH-RC-109	0.00	14.00	14.00	616	174	76	28%	12%
PCH-RC-110	0.00	20.00	20.00	699	221	89	32%	13%
PCH-RC-111	0.00	14.00	14.00	455	124	51	30%	11%
Including	9.00	14.00	5.00	245	107	52	43%	21%
PCH-RC-112	0.00	13.00	13.00	694	152	63	22%	9%

Hole ID	From	To	Width	TREO	MREO	HREO	MREO / TREO	HREO / TREO
PCH-RC-113	0.00	23.00	23.00	699	217	86	30%	12%
Including	12.00	18.00	6.00	721	234	96	32%	13%
PCH-RC-114	0.00	10.00	10.00	610	178	68	29%	11%
PCH-RC-115	0.00	22.00	22.00	640	201	85	31%	13%
Including	9.00	19.00	10.00	715	240	106	33%	15%
PCH-RC-116	0.00	24.00	24.00	2.11	396	137	20%	6%
Including	4.00	20.00	16.00	2.67	515	179	21%	8%
Including	11.00	24.00	13.00	2.94	548	178	21%	7%
PCH-RC-117	0.00	21.00	21.00	1.33	342	136	25%	10%
Including	5.00	21.00	16.00	1.51	404	163	27%	11%
PCH-RC-118	0.00	14.00	14.00	685	165	61	24%	9%
PCH-RC-119	0.00	18.00	18.00	893	222	83	24%	9%
Including	12.00	16.00	4.00	934	225	93	25%	10%
Including	9.00	13.00	4.00	1.84	471	180	25%	10%
PCH-RC-120	0.00	21.00	21.00	848	224	88	26%	10%
Including	11.00	13.00	2.00	1.5	435	156	29%	11%
PCH-RC-121	0.00	14.00	14.00	868	260	121	28%	14%
Including	5.00	10.00	5.00	854	227	106	28%	13%
Including	11.00	14.00	3.00	1.09	510	257	44%	23%
PCH-RC-122	0.00	15.00	15.00	813	247	98	30%	12%
Including	4.00	9.00	5.00	1.1	352	129	32%	12%
PCH-RC-123	0.00	15.00	15.00	818	216	86	26%	11%
PCH-RC-124	0.00	15.00	15.00	446	115	46	26%	10%
PCH-RC-125	0.00	8.00	8.00	223	49	22	22%	10%
PCH-RC-126	0.00	18.00	18.00	834	233	92	28%	11%
Including	12.00	14.00	2.00	1.7	427	176	25%	10%
PCH-RC-127	0.00	18.00	18.00	809	238	91	28%	11%
Including	13.00	15.00	2.00	1.38	443	152	21%	11%
PCH-RC-128	0.00	14.00	14.00	586	174	77	29%	13%
Including	8.00	11.00	3.00	343	103	56	29%	16%
PCH-RC-129	0.00	11.00	11.00	693	190	65	26%	9%
PCH-RC-130	0.00	12.00	12.00	4.07	854	276	21%	7%
Including	1.00	12.00	11.00	4.96	1.04	334	21%	7%
PCH-RC-131	0.00	9.00	9.00	767	186	74	24%	10%
PCH-RC-132	0.00	10.00	10.00	595	158	61	26%	10%
PCH-RC-133	0.00	11.00	11.00	637	153	60	25%	9%
PCH-RC-134	0.00	12.00	12.00	1.3	308	105	24%	8%
Including	2.00	6.00	4.00	1.32	326	108	25%	8%
PCH-RC-135	0.00	14.00	14.00	839	265	106	32%	13%
Including	9.00	13.00	4.00	641	191	84	31%	14%
PCH-RC-136	0.00	11.00	11.00	793	239	101	31%	13%
Including	7.00	11.00	4.00	590	176	83	30%	14%
PCH-RC-137	0.00	13.00	13.00	580	169	68	30%	12%
Including	3.00	5.00	2.00	569	175	73	31%	13%
PCH-RC-138	0.00	13.00	13.00	1.17	370	146	31%	12%
Including	2.00	6.00	4.00	1.53	495	197	32%	13%
Including	6.00	13.00	7.00	1.04	332	133	32%	13%
PCH-RC-139	0.00	12.00	12.00	516	170	75	35%	15%
Including	6.00	10.00	4.00	262	102	50	38%	19%

Figure 10-1 Drill Hole Location Map (DDH and RC)

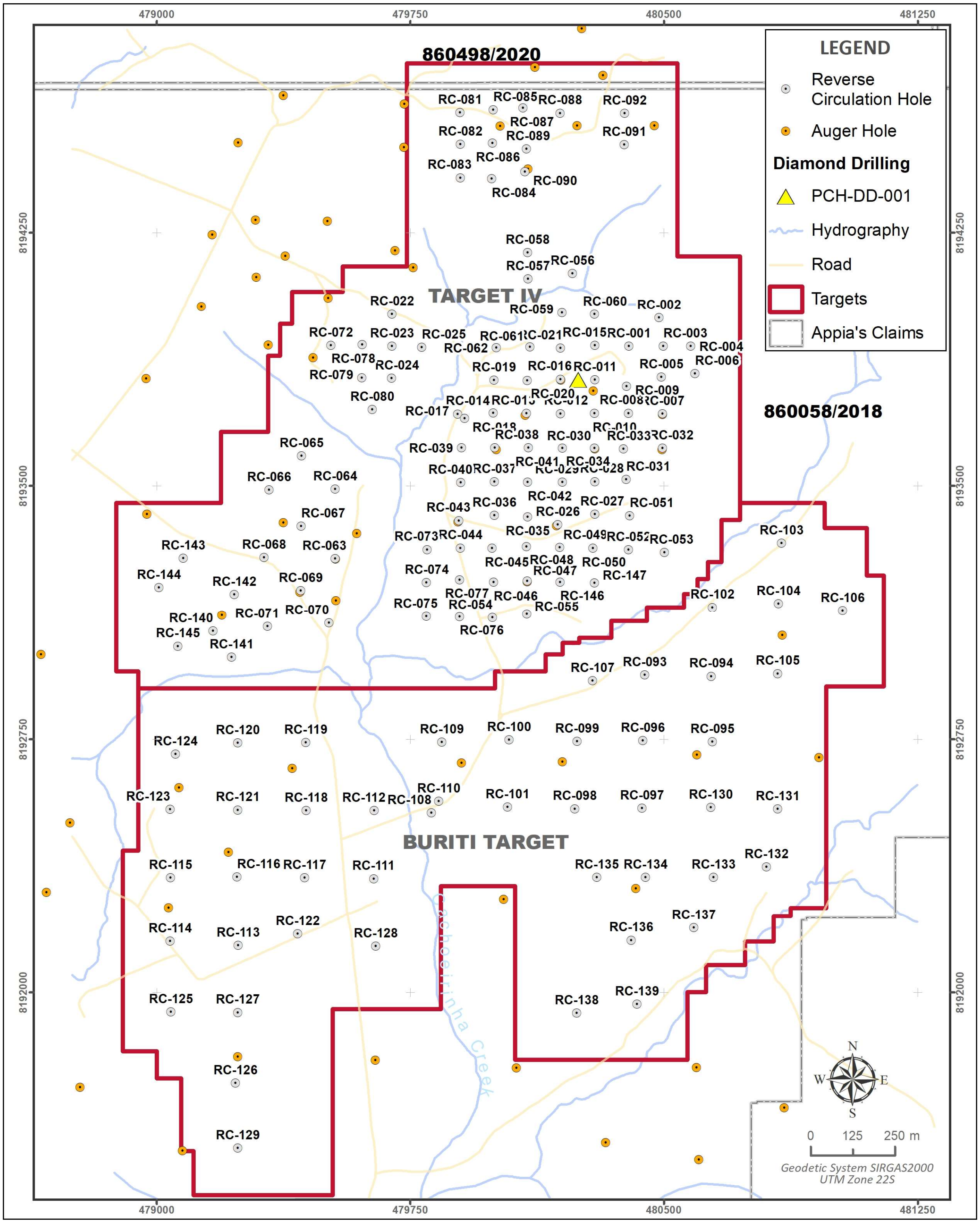
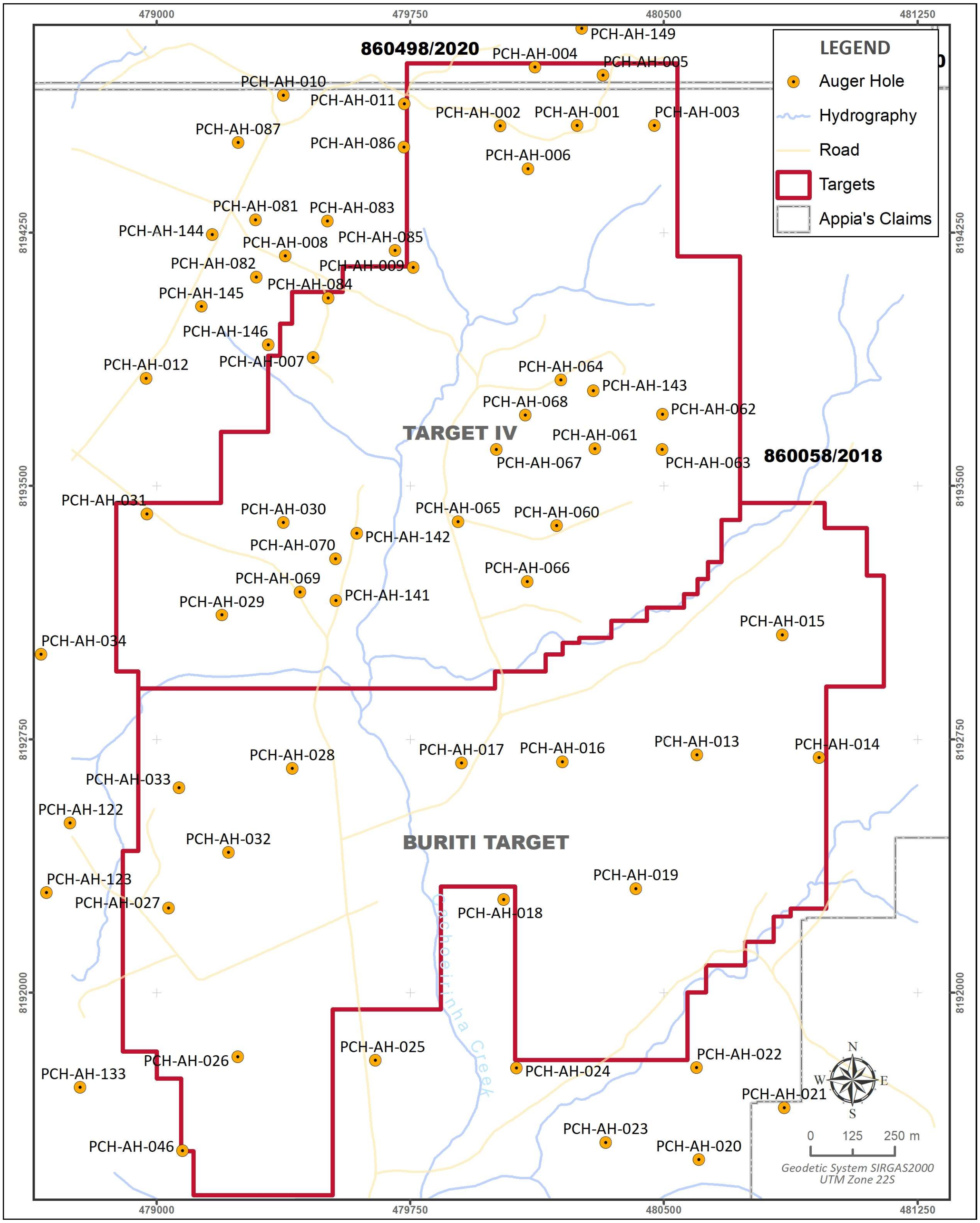


Figure 10-2 Drill Hole Location Map (Auger Holes)



11 SAMPLE PREPARATION, ANALYSES, AND SECURITY

Since acquiring the Property in 2023, Appia has maintained a consistent system for the sample preparation, analysis and security of all auger, RC, and diamond drill hole samples, including the implementation of a QA/QC protocol. The current MRE consists of drilling data collected by Appia since the acquisition of the Property. The following describes sample preparation, analyses and security protocols implemented by Appia.

11.1 Core Samples

The historic diamond drill holes, including DDH-PCH-001, are NQ size (47.6 mm diameter) vertical and reported intervals are true widths. It has been sampled at approximately one metre intervals, resulting in average sample sizes of approximately 1 – 5 kg. Drill core is geologically logged, photographed, marked for sampling, and cut by diamond saw. One half of the core is taken for sampling at Appia's logging facility, bagged in a resistant plastic bag, labeled, photographed, and stored for shipment. The remaining half is stored at Appia's secure core storage facility.

Appia re-assayed the entire hole using pulp from original samples and updated nomenclature to DDH-PCH-001. The samples were sent to the SGS laboratory in Vespasiano, Minas Gerais. In addition to the internal QA/QC of the SGS Lab, Appia has used its own control samples in each batch sent to the laboratory.

Quality control samples, such as blanks, duplicates, and standards (CRM) are inserted into each analytical run. For all analysis methods, the minimum number of QA/QC samples is one standard, one duplicate and one blank, introduced every batch. The rigorous procedures implemented during the sample collection, preparation, and analysis stages underscore the robustness and reliability of the analytical results obtained.

11.2 RC Samples

Reverse circulation (RC) drill holes were drilled vertically and reported intervals are true thickness. The material produced from drill holes are sampled at one meter intervals, resulting in average sample sizes of 5-25 kg. A small representative specimen was taken from each sample bag and placed into a chip tray for visual inspection and logging by the geologist. Quartering of the material was performed at Appia's logging facility using a riffle splitter and continued splitting until a representative sample weighing approximately 500 g each was obtained, bagged in a resistant plastic bag, labeled, photographed, and stored for shipment.

The bagged samples are sent to the SGS laboratory in Vespasiano, Minas Gerais. In addition to the internal QA/QC of the SGS Lab, Appia inserted control samples in each batch of samples sent to the laboratory.

Quality control samples, blanks, duplicates, and standards Certified Reference Material (CRM) were inserted into each analytical run. For all analysis methods, the minimum number of QA/QC samples is one standard, one duplicate and one blank, introduced in each batch which comprise a full-length hole. The rigorous procedures are implemented during the sample collection, preparation, and analytical stages to insure the robustness and reliability of the analytical results.

11.3 Auger Samples

The vertical auger, 4-inch diameter, reached 12 m depth maximum. A sampling of all material was collected each meter and put in a bag. The crude samples were split into one-kilo samples to be sent to the laboratory. All samples were labeled with an indication of the auger drill number and depth.

11.4 Historical Sampling Techniques

The following is a description of sampling and sample preparation techniques followed by the vendor for historical exploration completed (Section 6) described by Scholtz and Bastos (2023).

The sampling techniques used in the prospecting include:

- Stream sediments
- Rock chip
- Trenches
- Diamond drilling
- Auger drilling.

11.4.1 Stream Sediment Sampling

This phase was carried out in two main stages: the planning and execution stage. The planning was carried out by a team of geologists and consisted of the recognition of hydrographic micro basins that make up the project area. Thus, the most representative drainages for each basin were chosen, and sample collection points were defined to obtain a robust sampling that would represent the area of interest. Finally, a map was created with the coordinates of each point. The execution stage was carried out by the team with mining technicians and technical assistants, who collected samples of stream sediment and active stream sediment, following the most current and robust sampling procedure.

For current sediment, whose objective is the identification of heavy metals, it is necessary to identify the point of the higher energy of the bed to be sampled, which is characterized by the material of greater granulometry, generally ranging from coarse sand to gravel. After this point is identified by the field team, two samples of equal volume (2 liters) are collected, one for laboratory analysis and the other for archiving.

11.4.2 Grab (Rock) Sampling

Rock samples were collected, a hand-size, during the mapping by geologists. The samples were sent to chemical analysis and petrography. Rocks with texture, grain size, color, or mineralogy variation were collected to define the typologies in the area. Special attention to the occurrence of sulfides on the rocks or hydrothermal alteration evidence to be sampled.

11.4.3 Trenches

Samples were collected from vertical channels in the wall trenches. Sampling was made according to the textural variation of the materials and the presence of heterogeneities such as blocks and patches of different colors. Samples were collected with regular 50 cm length in seven of the ten trenches.

11.4.4 Diamond Drill Hole Sampling

The exploratory diamond drill holes (DDH) were carried out in target IV. The holes were vertical dip and no azimuth. The maximum depth was 100 meters. All core was described by geologist and sampling plan considering samples one meter each in the whole hole. The information was filled in the individual logging and later was included the chemical results.

11.4.5 Auger Sampling

An auger drilling program was carried out on a regular grid 400 x 400 meters, and 200 x 200 meters. The vertical auger, 4-inch diameter, reaches a 10m depth maximum. A sampling of all material was collected each meter and put on the bag. The crude samples were split up into one-kilo masses to be sent to the laboratory. All samples were labeled with an indication of the auger drill number and depth.

11.5 Geochemical analysis and sample preparation

All samples were sent to private chemical laboratory SGS Laboratory Ltda situated in Minas Gerais state, Brazil. The SGS Laboratory Ltda carries out the commercial procedures for the preparation of samples and chemical analysis in different methods, as follow:

- Multielementary determination by digestion with Aqua régia (ICP OES)
- Multielementary determination by multi-acid (ICP OES / ICP MS)
- Fusion with lithium metaborate - Earth Rare (ICP MS).
- Fusion with lithium tetraborate – Earth Rare (XRF)
- Loss of ignition (XRF)

Quality control was not used in the routine, except for the commercial laboratory itself (SGS).

11.6 Quality Assurance/Quality Control

11.6.1 Certified Reference Material

Three CRM’s have been used to date by Appia during the PCH Project drill programs: multi-element standards from the CDN Resource Laboratories in Langley, B.C. (CDN-RE-1201, CDN-RE-1202, and CDN-RE-1203.

Appia’s QA/QC program for 2023 included the insertion of 266 CRM’s including: 40 CDN-RE-1201, 165 CDN-RE-1202, and 61 CDN-RE-1203 and a total of 296 Blanks. Standard failure rate for CDN-RE-1201 was 2%, CDN-RE-1202 was 2%, and CDN-RE-1203 was 0%. Warning and failure rate percentages are presented in Table 11-1.

The results indicate there are no significant issues with the assay data. The data verification programs undertaken on the data collected from the Project support the geological interpretations, and the analytical and database quality, and therefore data can support mineral resource estimation.

Table 11-1 Standard Variable Warning and Failure Rate.

Variable	Standard 1201		Standard 1202		Standard 1203	
	Warnings Rate	Failures Rate	Warnings Rate	Failures Rate	Warnings Rate	Failures Rate
Nd_2O_3	0%	0%	3%	0%	3%	0%
Sc	7%	0%	4%	3%	0%	4%
Dy_2O_3	4%	0%	0%	1%	0%	0%
Pr_6O_{11}	0%	0%	6%	2%	6%	0%
Tb_4O_7	4%	23%	8%	11%	3%	0%
Co	7%	0%	3%	1%	7%	0%
Gd_2O_3	19%	4%	6%	2%	0%	0%
CeO_2	0%	0%	3%	0%	3%	0%
La_2O_3	0%	0%	1%	1%	0%	0%
Lu_2O_3	0%	0%	12%	1%	0%	0%
Y_2O_3	0%	0%	1%	0%	0%	0%
Ho_2O_3	8%	0%	2%	0%	0%	0%
Er_2O_3	8%	0%	1%	0%	0%	0%
Eu_2O_3	0%	0%	9%	1%	6%	0%
Yb_2O_3	4%	0%	1%	1%	0%	0%
Sm_2O_3	0%	0%	3%	1%	3%	0%
Tm_2O_3	4%	0%	1%	0%	9%	0%
Total	4%	2%	4%	2%	2%	0%

11.6.2 **Blank Material**

Blank material is sourced from a locally were inserted into the sample sequence to determine the degree of sample contamination after sample collection, particularly during the sample preparation process. This material does not have certified values established by a third party. The QA/QC program in 2023 included the insertion of 147 blank samples.

For blank sample values, failure is more subjective, and a hard failure ceiling value has not been set. Evaluation of blank samples was done using the detection limits of each element with a (10x detection limit) indicates that the combined blank failure rate for 2023 was 24%. CeO_2 and La_2O_3 returned the highest failure rates of and chemical component of 97% and 93% respectively (Table 11-2).

Table 11-2 Blank Warning and Failures

Variable	Warnings	Failures	Warnings Rate	Failures Rate
Nd_2O_3	120	4	82%	3%
Sc	2	1	2%	1%
Dy_2O_3	40	7	27%	5%
Pr_6O_{11}	40	95	27%	65%
Tb_4O_7	1	3	1%	2%
Co	50	6	42%	5%
Gd_2O_3	72	25	49%	17%
CeO_2	3	143	2%	97%
La_2O_3	6	136	4%	93%
Lu_2O_3	1	3	1%	2%
Y_2O_3	13	98	9%	67%
Ho_2O_3	8	43	5%	29%
Er_2O_3	5	4	3%	3%
Eu_2O_3	1	3	1%	2%
Yb_2O_3	0	3	0%	2%
Sm_2O_3	28	5	19%	3%
Tm_2O_3	2	2	1%	1%
Total	**392**	**581**	16%	24%

11.6.3 Duplicate Material

As part of the QA/QC program during 2023 Appia included the insertion of 138 duplicate samples. The duplicate plots all look reasonable in relation to the trend line. The duplicate information for Nd_2O_3 is presented in Figure 11-1. One Nd_2O_3 duplicate value returned a clear error duplicate value of 234.0 versus 1045.2 which is almost 4.5 times more than the original value.

The duplicate information for Sc is presented in Figure 11-2. One Sc duplicate value returned 5.9 versus 41.7 which is almost 9 times more than the original value. The duplicate data is reasonable and does not display any concerns.

Figure 11-1 Duplicate Scatter Plot for Nd_2O_3

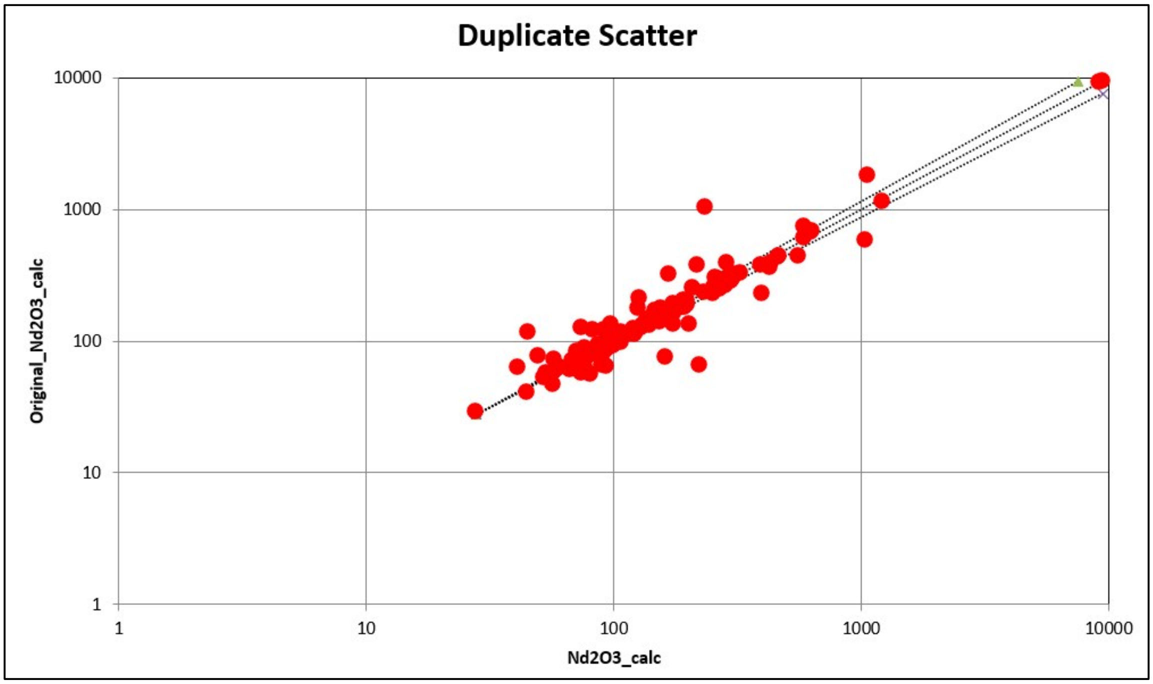
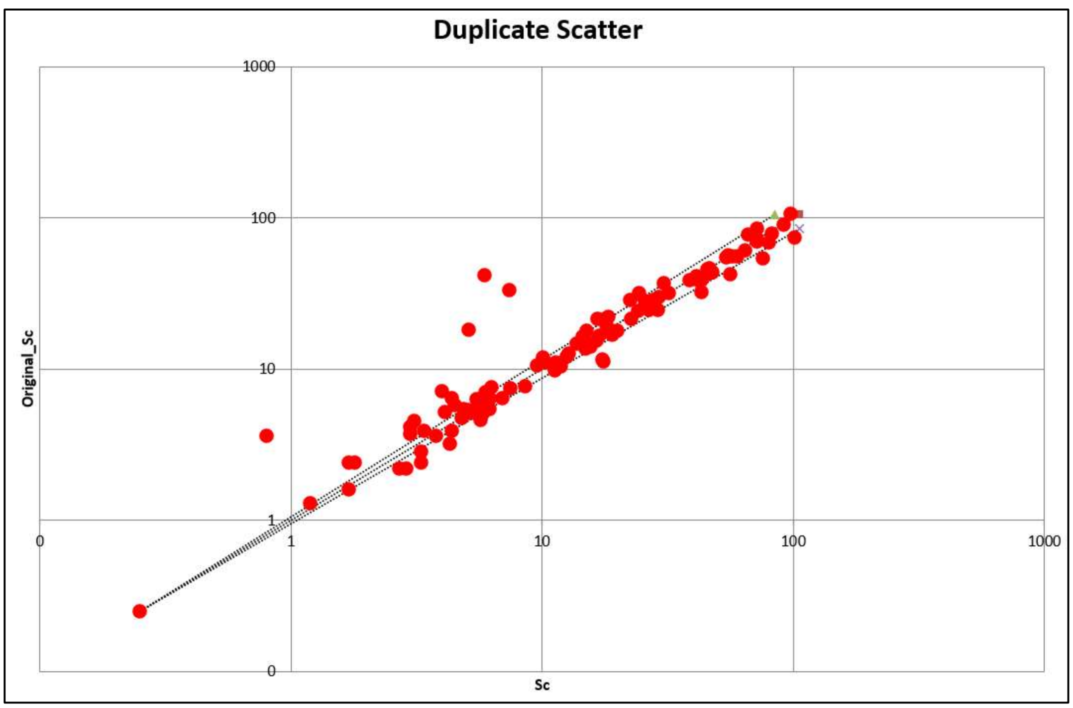


Figure 11-2 Duplicate Scatter Plot for Sc



11.7 QP's Comments

It is the Author's opinion, based on a review of all possible information, that the sample preparation, analyses and security used on the Project meet acceptable industry standards and the drill data can be used for geological and resource modeling, and estimation of Indicated and Inferred mineral resources.

12 DATA VERIFICATION

The following section summarises the data verification procedures that were carried out and completed and documented by the Authors for this technical report, including verification of all drill data collected by Appia during their 2023 drill programs, as of the effective date of this report.

12.1 Drill Sample Database

SGS received most certificates corresponding to the samples in the database. A few of the "overlimit" certificates appear to be missing from the files received. Also, the certificates corresponding to the one diamond drill hole were not supplied. SGS verified all 1982 RC holes' assays against the certificates. Overlimit assays were missing for 10 assays. These assays could be correct in the database but SGS has no way to verify that. They do not seem unreasonable and are used for the resource estimation. Also, 30 assays are at zero grade for Scandium and Cobalt in the database but have some reported grades found in the certificates. This makes the resource estimation slightly conservative. No very high grades of Scandium and Cobalt are in those assays and the impact of including them is estimated to be a potential 1% of Scandium resource increase in the grade. No problem was detected that could cause any significant impact on the resource estimates.

12.2 Site Visit

Mr. Marc-Antoine Laporte visited the Project site on November 9 to 12, 2023. During the site visit, Mr. Laporte conducted a general review of the logging and QA/QC procedures in place for the 2022-2023 drill program. Drill hole collars were visited, and selected collar positions checked with a hand-held global positioning system (GPS) instrument. An inspection of the drilling equipment and deviation survey methodology and tools was completed.

An extensive review of the mineralized core/chips from the main zones (Target IV and Buriti) was conducted during the first two days of the visit including discussion of the sampling method with technical staff. He also discussed the geological model and the information needed to build the maiden mineral resources estimate.

12.3 Conclusion

All geological data has been reviewed and verified as being accurate to the extent possible, and to the extent possible, all geologic information was reviewed and confirmed. There were no significant or material errors or issues identified with the drill database. Based on a review of all possible information, the authors are of the opinion that the database is of sufficient quality to be used for the current Indicated and Inferred MRE.

13 MINERAL PROCESSING AND METALLURGICAL TESTING

Preliminary metallurgical test work has involved mineralogy studies at Actlabs and SGS Mineral Services in Canada and geometallurgical and flotation test work at the Federal University of Goiás ("UFG"). The work at UFG involved processing a sample of material from auger hole 8 from 9.25 m to 9.5 m depth. Sample material was dried, ground and screened to provide 7 size fractions, namely 48#, 100#, 150#, 200#,325# and 500#. Chemical and mineralogical studies were completed on all size fractions and 30 rougher flotation tests performed on the coarse fraction using four collector types to assess La, Nd and Nb recoveries. The results of the tests showed rare earths are concentrated in the smaller size fractions, especially the -325 mesh (44 micron) size fractions. This is an expected result for ionic clay rare earth deposits.

La, Nd and Nb were successfully floated in the rougher tests, with recoveries of La and Nd typically averaging about 50% for the best collector conditions. Importantly, the flotation concentrates averaged 127 ppm Th and 38 ppm U, indicating radioactivity issues associated with mineral processing should be very manageable. Note that the full test report was not available for review. However, the data do indicate that flotation is a viable recovery scheme for primary mineralization. It is likely that a combination of grinding, screening, magnetic separation, and flotation will be required to produce a suitable concentrate as feed for further processing.

A composite sample representing material collected from trenches, diamond drill holes and auger holes (Table 13-1) was subject to chemical and mineralogical analysis using Qemscan for particle mapping (PMA) and modal analysis. The results of the overall mineralogical analyses are summarized in Table 13-2.The data indicate significant localized differences in mineralogical composition, indicating the need for closely spaced sampling to better define mineralogy in support of process design.

Table 13-1 Sample Composition for Mineralogical Analysis at ActLabs, Canada

Actlab ID	Client ID
A22-02683-01	PCH-RU03-0m_0.5m
A22-02683-02	PCH-F01-07
A22-02683-03	PCH-F03-102
A22-02683-04	PCH-TD-23-2.00-3.00MT
A22-02683-05	PCH-TD-46-5.00-6.00MT
A22-02683-06	PCH-TD-39-5.00-6.00MT
A22-02683-07	PCH-TD-40-4.00-5.00MT

The assays for the composite sample are provided in Appendix B.

Table 13-2 Summary Mineralogical Composition (Modal basis) PCH Project

(Samples as above in Table 13-1)

	Actlabs ID	Sam01	Sam02	Sam03	Sam04	Sam05	Sam06	Sam07
	Pyrite	0.02	0.05	0.02	0.04	0.03	0.03	0.02
	Barite	0.01	n.d.	0.00	n.d.	n.d.	n.d.	0.00
	Mag/Hema	3.08	1.55	9.39	0.71	4.85	1.06	1.68
	Fe Hydroxide	13.55	11.94	24.56	5.10	10.78	12.65	7.82
	Mn Hydroxide	2.58	0.30	0.04	1.18	0.24	0.01	0.04
	Fe-Mn Hydroxi	0.95	3.04	0.05	0.32	0.19	0.03	0.03
	Bohemite	0.09	n.d.	1.63	0.02	0.55	0.55	0.41
	Spinel Fe-Cr	0.04	0.00	n.d.	0.10	0.01	0.02	n.d.
	Ilmenite	0.16	0.08	2.82	0.12	3.76	3.09	4.16
	Rutile	0.21	0.40	1.73	0.26	4.39	0.44	1.06
	Ferrocolumbite	0.01	0.00	0.00	0.01	0.01	n.d.	n.d.
	Fe Hydroxide w/low Ti	0.08	0.01	4.47	0.27	3.32	7.77	10.07
	Hollandite	6.68	0.56	0.93	3.71	3.41	0.01	0.03
	Quartz	15.14	9.73	2.38	32.92	0.84	0.29	0.66
	Feldspar	7.08	28.61	0.25	3.21	0.45	0.09	0.11
	Mica	1.46	8.38	1.35	0.79	13.55	0.11	0.68
	Amphibole	0.75	0.84	0.14	1.29	0.04	0.02	0.06
	Si-Al Clays	0.20	0.03	0.20	2.42	1.04	0.24	0.32
	Lateritic Clays	11.90	5.30	1.48	32.78	13.99	22.19	16.50
	Zircon	0.01	0.00	0.02	0.00	0.03	0.00	0.00
	Calcite	0.08	0.03	0.03	0.11	0.19	0.00	0.02
	Bastnasite (La-Ce)	0.16	0.05	n.d.	0.23	0.07	n.d.	0.01
	Monazite	5.07	2.59	0.06	3.12	1.15	0.01	0.01
	Apatite	0.00	0.00	0.00	0.02	0.00	0.00	n.d.
	Ba-La-Sr-Nd Phosphate (Daqingshanite?)	0.35	0.00	0.03	n.d.	0.59	0.00	0.00
Lateritic altered phases	Lateritic REE (Altered mixed)	1.10	1.44	0.01	0.52	0.03	0.00	0.01
	Al Hydroxide w/low Fe-Ti	1.18	0.00	26.83	0.13	3.00	6.62	7.27
	Fe Hydroxide w/low Ti-Al	2.24	0.43	10.66	1.90	16.28	26.43	26.40
	Fe Hydroxide w/low Al-Si-Ti	24.66	24.04	9.69	8.24	15.74	17.93	22.27
	Others	1.13	0.58	1.22	0.48	1.44	0.42	0.37
	Sum	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: 3S LTDA

The data for monazite, one of the principal minerals containing rare earth elements, indicates that 100% of the monazite is <75 microns, and the D50 is approximately 50 microns for all samples. Bastnaesite has a D50 of 6 microns, while a Ba-La-Sr-Nd phosphate mineral has a D50 of less than 10 microns.

These data are indicative of an ore exhibiting both ionic clay development and containing residual primary minerals. Test work will be required to determine the mix of ionic clay and primary rare earth element containing minerals to optimize the metallurgical flow sheet and process recoveries. The data also demonstrate the potential for significant localized differences in grade between auger hole, drill holes and trenches.

The composite data also reported a scandium (Sc) assay of 62 ppm. This level is considered meaningful, and recovery of scandium could add substantial value to the project.

Two auger samples have been tested at SGS Lakefield for ionic clay leaching potential. Ammonium sulphate was used as the lixiviant. Preliminary results indicate rare earth elements are liberated. Full details of the test work and results have not yet been received. It is advisable to conduct a comprehensive survey employing leaching assays to verify both the presence and assess the recoverable grades of desorbed Rare Earth Elements (REE).

14 MINERAL RESOURCE ESTIMATES

14.1 Introduction

The completion of the current Mineral Resource Estimate (MRE) involved the assessment of a drill hole database, which included all data for drilling completed as of February 1, 2024, a three-dimensional (3D) model based on the layers lithology, pit optimization parameters, classification of the mineral resource estimate (Indicated and Inferred at this stage) and review of available written reports.

Inverse squared distance restricted to a layered model was used to interpolate rare earth oxides into a block model along with Scandium and Cobalt. Mineral resources are reported in the summary tables in Section 14.11. The MRE takes into consideration that the current deposit would be mined by open pit mining.

14.2 Drill Hole Database

To complete a Mineral Resource Estimate for the Deposit, the database received from Appia on January 25, 2024. The data used for this report is explained in Item 10 of this report. The database includes 1 diamond drill hole, 147 RC holes and 142 auger holes. It contains the location information (SIRGAS 2000 UTM Zone 22S), survey data, assay data, and lithology data. The data (see details in Table 14-1 and Table 14-2) was then imported into the SGS Genesis software for statistical analysis, block modeling and resource estimation. After an initial evaluation of the database, some of the data was fixed. All drill holes were draped to the topography to use a consistent elevation. Note that all drill holes touch the resource model and are used to constrain it.

Table 14-1 Statistics of the Drill Holes in the PCH Project Database (Used for the MRE)

Hole Types	Holes			Assays	
	Count	Tot. Length	Avg. Len.	Count	Length
Diamond	1	243.5	243.5	244	243.25
RC	147	2019	13.73	1982	1982

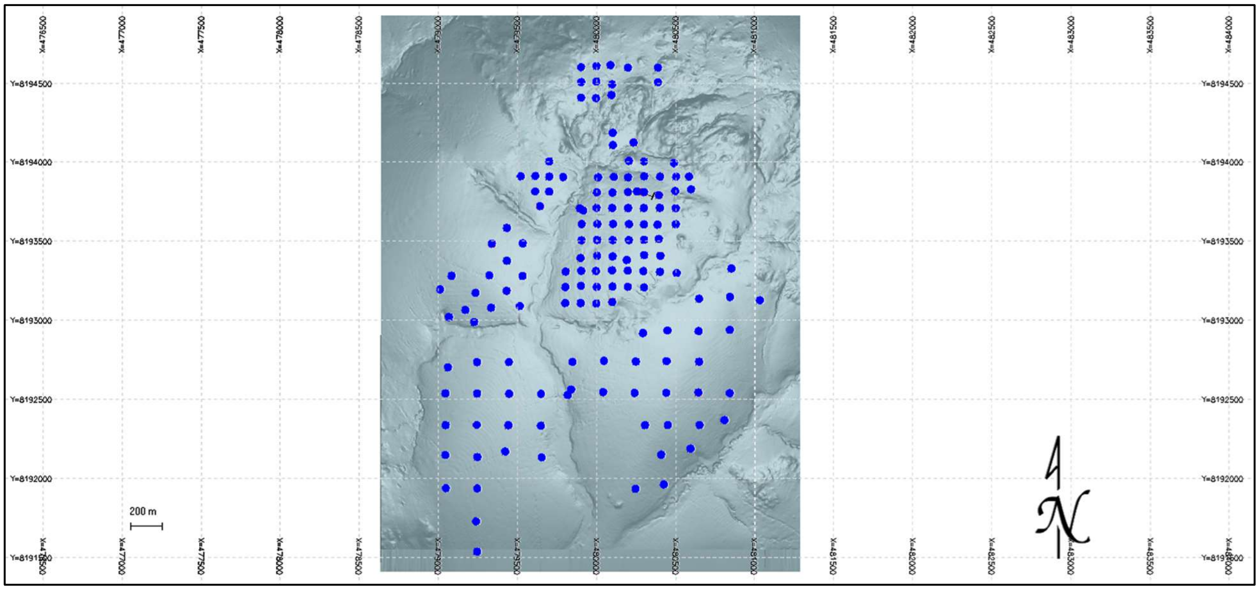
Table 14-2 Statistics of the Auger Holes in the Database (NOT Used for the MRE)

Hole Types	Holes			Assays	
	Count	Tot. Length	Avg. Len.	Count	Length
Auger	142	993.3	7.00	2791	2675.85

14.3 Topography Surface

The topography surface available for the PCH project is a lidar surface covering all drill holes except for 15 meters at the south end near hole PCH-RC-129. SGS enlarged the surface by 140 meters to the south making the extrapolated elevations reasonable for the project. This extension affects only 0.3 % of the MRE. The final topo surface is very detailed and covers more than the resource area. The final topo surface is presented in Figure 14-1.

Figure 14-1 Final Topo Surface Used for the Resource Estimation (LIDAR)



14.4 **Mineral Resource Modelling and Wireframing**

Given that the deposit is in layers, it was decided to make a model of the thicknesses of the different layers. Modeling was done on the quaternary layers interpretations. Layers are Top Soil on top (coded as top_sol), then the Soil layer (coded as sol), then the Saprolite layer (coded as sap) and the rock layer (coded as rock). The rock, while mineralized, was not included in the MRE because the required extraction process would be different and is not currently part of the project development strategy. Also, data from the hard rock is currently limited.

A single hole was drilled in the rock entirely and is located at the north extremity of the drilled area. When a layer is absent, a value of 0.01 m of thickness was entered in order to make sure the model was valid. A total of 148 drill holes were used for the modeling of the layers with 3 layers of mineralized material each. That makes a total of 444 intervals in the interpretation of the layers. There were 51 instances where the thickness was nil. Again, a value of 0.01 m of thickness was entered to make sure the model was valid. The total thickness varies from 0.03 m to 31.01 m with an average of 12.75 m as shown in Table 14-3.

A cross-section is shown at Figure 14-2 and Figure 14-3 to illustrate the surface model created. The lines representing the surfaces can be a little bit off from the drill hole information due to projection on the section. The surfaces fit the drill holes exactly in 3 dimensions.

Table 14-3 Statistics on the Mineralized Layers Thicknesses

	Thicknesses (m)		
Layer	**Minimum**	**Maximum**	**Average**
Top Soil	0.01	6	1.41
Soil	0.01	15	4.61
Saprolite	0.01	22	6.72
Total of 3 Layers	**0.03**	**31.01**	**12.75**

Figure 14-2 Cross-Section – 480,400 mE – Surface Model Used to Constrain the Model

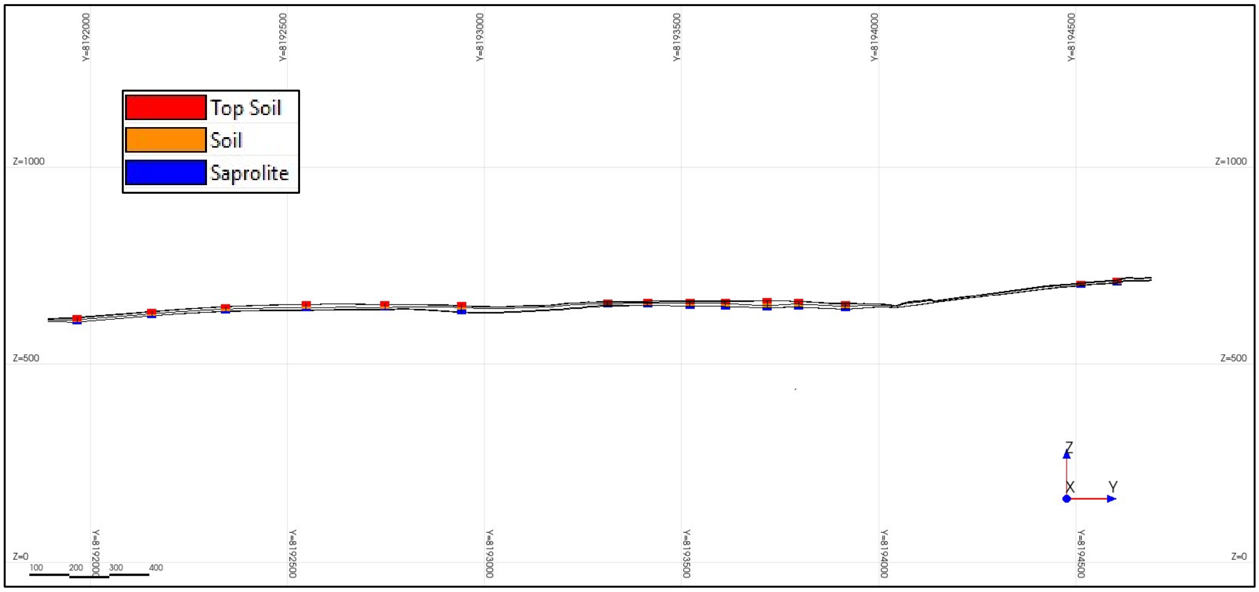
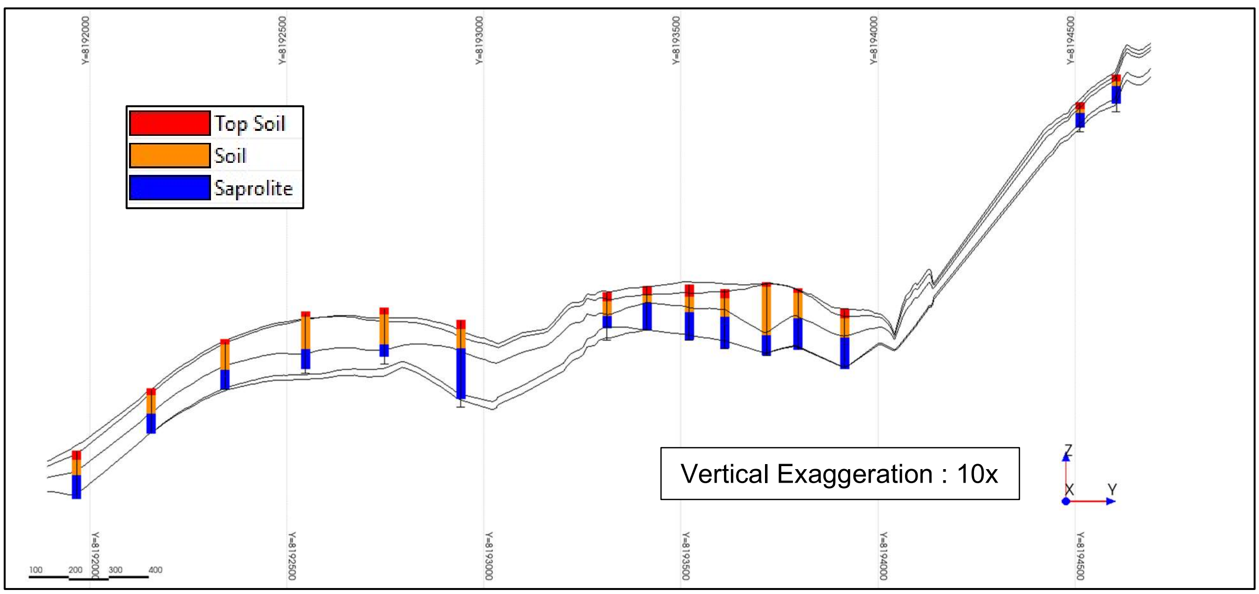
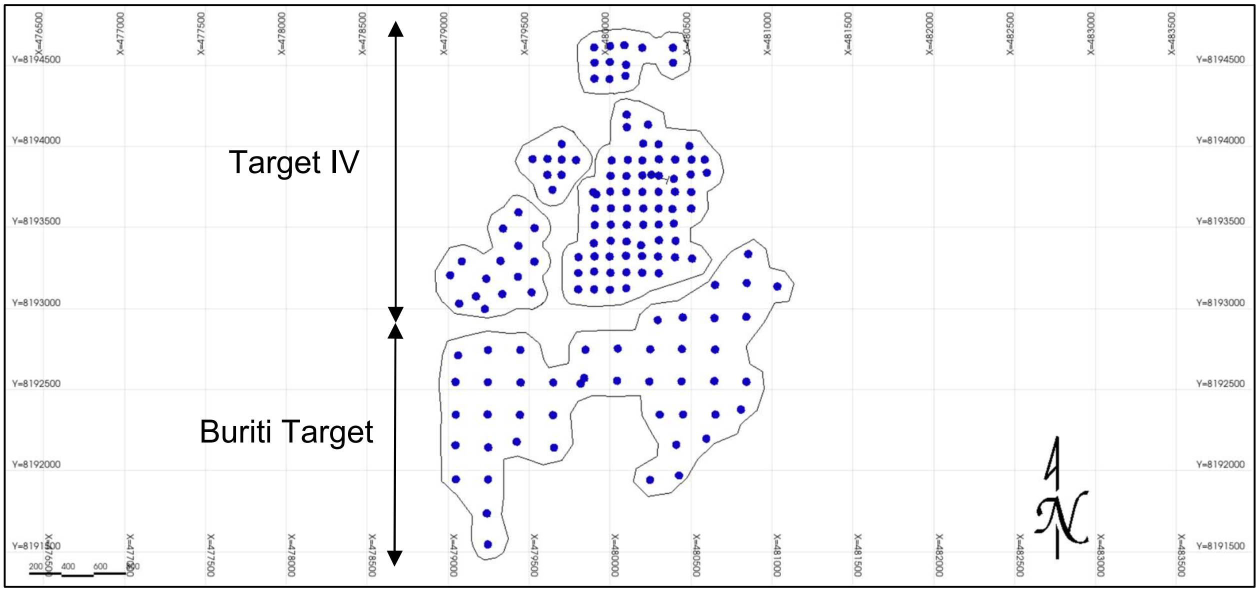


Figure 14-3 Same Cross-Section with Vertical Exaggeration



Also the block model was constrained to limit the extrapolation to far outside the drilled areas and also where there are topographical lows that can mean the absence of Top Soil / Soil / Saprolite. The limits used are shown in Figure 14-4. Note that the north part of the deposit is called the Target IV and the south part is called the Buriti Target. These two zones have similar geometric properties but somewhat different geochemical properties. The Target IV is more rare earth rich and the Buriti Target is more scandium rich. By default, the resource is extrapolated 100 m from the existing drill holes. Some areas show some drops in the topography that could mean a reduction in the thickness of the mineralized material. The extrapolation has been reduced in those areas to as little as 40 m.

Figure 14-4 Shapes Limiting the Resource Estimation in Plan View



14.5 Compositing and Grade Capping

The composites used are the original assays given that 1867 of the 1868 assay in the 3 layers have lengths between 0.5 m and 1.05 m. Capping was studied but was deemed unnecessary because no significant extreme grades are present in the database. It is estimated that capping of highest grades could potentially reduce the MRE by around 1%.

14.6 Bulk Density

A total of 55 measurements of the density were made on two of the RC holes PCH-RC-068 (33) and PCH-RC-147 (22). These tests were done by pycnometer and the required information to convert volumes into tonnages are bulk density. The "chosen bulk densities" are based on other similar projects SGS has worked on. The statistics on the densities and the final densities chosen for the resource estimation are displayed in the Table 14-4.

Table 14-4 Statistics – Density Measurements vs Chosen Bulk Densities for the MRE

Lithology	Count	Pycnometer Density	Chosen Bulk Density
Top Soil	0	NA	2.00
Soil	22	2.47	1.80
Saprolite	29	2.27	2.10
Rock	4	2.40	2.50

14.7 Block Model Parameters

Blocks of 10 x 10 x 0.2 m in the x (east), y (north) and z (elevation) directions were used to fill the 3 layers volumes. No rotation was applied to the block model. The small height of the blocks made it possible to use entire blocks so that a block with its center inside the layer volume is considered as 100% part of this layer. The block size was selected based on borehole spacing, composite assay length, the geometry of the mineralization, and the selected reasonable mining methods (open pit). The resulting block model contains

227,432 blocks in the Top Soil layer, 730,118 blocks in the Soil layer and 997,874 blocks in the Saprolite layer. The Table 14-5 shows the detailed setup for the block model.

Table 14-5 Block Model Parameters

Model Name	X (East)	Y (North)	Z (Elevation)
Origin (center of block 1,1,1)	478,600	8,190,900	564
Block Count	268	441	891
Block Size	10	10	0.2
Discretization (for the Estimation)	4	4	1
Rotation	0°		

14.8 Grade Interpolation

All modeling and estimation was done using the SGS Genesis© mining software. Inverse square distance was retained as the estimation method of choice for this project. Since there is no clustering of the data, that the number of drillholes is limited and that the grades are not nuggetty.

As for the search ellipsoids, we simply used them big enough to estimate all the blocks in the mineralized volumes. The details are in Table 14-6. The search ellipsoids were attributed variable orientation, so they conform to local orientations of the layers.

Three passes were used to interpolate grade into all of the blocks in the deposit wireframe model (Table 14-6**).** For Pass 1 the search ellipse size (in meters) for all layers was set at 115 x 115 x 30 m; for Pass 2 the search ellipse size for each domain was set at 230 x 230 x 60 m; for Pass 3 the search ellipse size was set at 460 x 460 x 120 m. Classification of the blocks was done as a separate step in the MRE process.

A minimum of a single drill hole is needed to estimate blocks inside the layers. Grades were interpolated into blocks using a minimum of 5 and maximum of 9 composites to estimate block grades during Pass 1 and Pass 2 (maximum of 3 composites per drill hole), and a minimum of 2 and maximum of 9 composites to estimate block grades during Pass 3 (maximum of 3 composites per drill hole) (Table 14-6).

Each of the 17 variables was estimated separately. Also, the 3 estimated layers were estimated with “hard boundaries” where the grades from different layers cannot influence the estimated layer.

Table 14-6 Grade Interpolation Parameters by Layer

Parameter	Pass 1	Pass 2	Pass 3
Search Type	Ellipsoid		
Azimuth	Variable depending on the layers’ orientations		
Dip	Variable depending on the layers’ orientations		
Spin	0°		
Size X	115	230	460
Size Y	115	230	460
Size Z	30	60	120
Min. Samples	5	5	2
Max. Samples	9	9	9
Max. Samples per Hole	3	3	3

14.9 Mineral Resource Classification Parameters

The Mineral Resource Estimate presented in this Technical Report was prepared and disclosed in compliance with all current disclosure requirements for mineral resources set out in the NI 43-101 Standards of Disclosure for Mineral Projects. The classification of the current Mineral Resource Estimate into Measured, Indicated and Inferred is consistent with current 2014 CIM Definition Standards for Mineral Resources and Mineral Reserves, including the critical requirement that all mineral resources “have reasonable prospects for eventual economic extraction”.

Mineral Resources are sub-divided, in order of increasing geological confidence, into Inferred, Indicated and Measured categories. An Inferred Mineral Resource has a lower level of confidence than that applied to an Indicated Mineral Resource. An Indicated Mineral Resource has a higher level of confidence than an Inferred Mineral Resource but has a lower level of confidence than a Measured Mineral Resource.

A Mineral Resource is a concentration or occurrence of solid material of economic interest in or on the Earth’s crust in such form, grade or quality and quantity that there are reasonable prospects for eventual economic extraction.

Interpretation of the word ‘eventual’ in this context may vary depending on the commodity or mineral involved. For example, for some coal, iron, potash deposits and other bulk minerals or commodities, it may be reasonable to envisage ‘eventual economic extraction’ as covering time periods in excess of 50 years. However, for many gold deposits, application of the concept would normally be restricted to perhaps 10 to 15 years, and frequently to much shorter periods of time.

The location, quantity, grade or quality, continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling.

Measured Mineral Resource

A Measured Mineral Resource is that part of a Mineral Resource for which quantity, grade or quality, densities, shape, and physical characteristics are estimated with confidence sufficient to allow the application of Modifying Factors to support detailed mine planning and final evaluation of the economic viability of the deposit.

Geological evidence is derived from detailed and reliable exploration, sampling and testing and is sufficient to confirm geological and grade or quality continuity between points of observation.

A Measured Mineral Resource has a higher level of confidence than that applying to either an Indicated Mineral Resource or an Inferred Mineral Resource. It may be converted to a Proven Mineral Reserve or to a Probable Mineral Reserve.

Mineralization or other natural material of economic interest may be classified as a Measured Mineral Resource by the Qualified Person when the nature, quality, quantity and distribution of data are such that the tonnage and grade or quality of the mineralization can be estimated to within close limits and that variation from the estimate would not significantly affect potential economic viability of the deposit. This category requires a high level of confidence in, and understanding of, the geology and controls of the mineral deposit.

Indicated Mineral Resource

An ‘Indicated Mineral Resource’ is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics can be estimated with a level of confidence sufficient to allow the appropriate application of technical and economic parameters, to support mine planning and evaluation of the economic viability of the deposit.

Geological evidence is derived from adequately detailed and reliable exploration, sampling and testing and is sufficient to assume geological and grade or quality continuity between points of observation.

An Indicated Mineral Resource has a lower level of confidence than that applying to a Measured Mineral Resource and may only be converted to a Probable Mineral Reserve.

Mineralization may be classified as an Indicated Mineral Resource by the Qualified Person when the nature, quality, quantity and distribution of data are such as to allow confident interpretation of the geological framework and to reasonably assume the continuity of mineralization. The Qualified Person must recognize the importance of the Indicated Mineral Resource category to the advancement of the feasibility of the project. An Indicated Mineral Resource Estimate is of sufficient quality to support a Preliminary Feasibility Study which can serve as the basis for major development decisions.

Inferred Mineral Resource

An Inferred Mineral Resource is that part of a Mineral Resource for which quantity and grade or quality are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify geological and grade or quality continuity.

An Inferred Mineral Resource has a lower level of confidence than that applying to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.

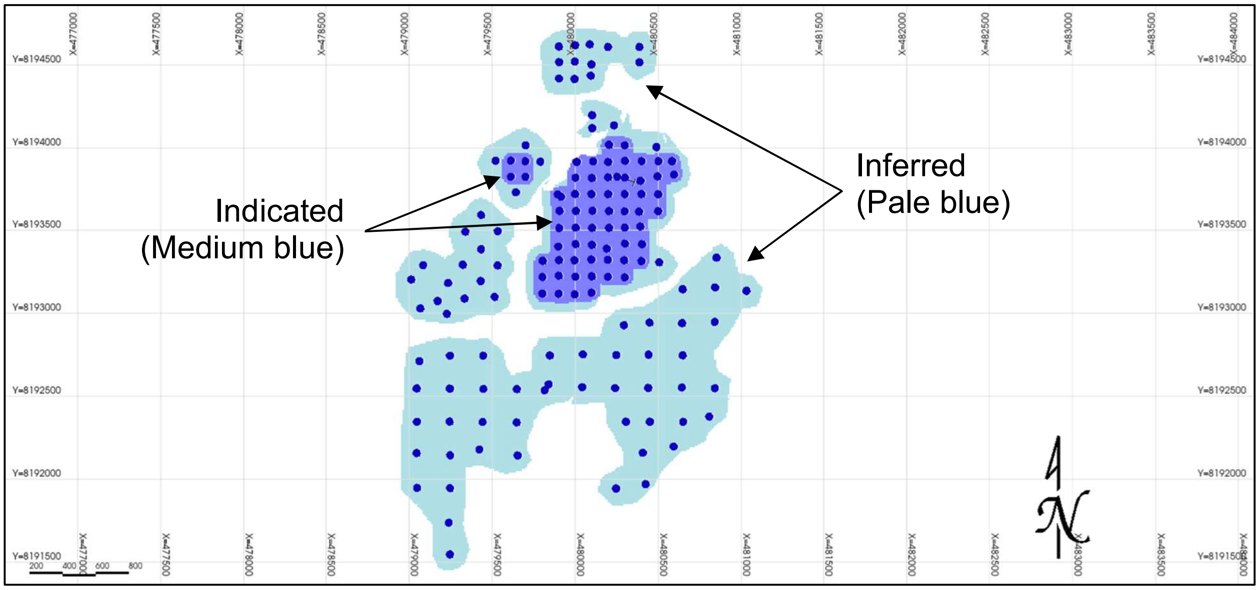
An Inferred Mineral Resource is based on limited information and sampling gathered through appropriate sampling techniques from locations such as outcrops, trenches, pits, workings and drill holes. Inferred Mineral Resources must not be included in the economic analysis, production schedules, or estimated mine life in publicly disclosed Pre-Feasibility or Feasibility Studies, or in the Life of Mine plans and cash flow models of developed mines. Inferred Mineral Resources can only be used in economic studies as provided under NI 43-101.

There may be circumstances, where appropriate sampling, testing, and other measurements are sufficient to demonstrate data integrity, geological and grade/quality continuity of a Measured or Indicated Mineral Resource, however, quality assurance and quality control, or other information may not meet all industry norms for the disclosure of an Indicated or Measured Mineral Resource. Under these circumstances, it may be reasonable for the Qualified Person to report an Inferred Mineral Resource if the Qualified Person has taken steps to verify the information meets the requirements of an Inferred Mineral Resource.

14.9.1 Classification Methodology

At this stage of the project, no resource was classified as measured. The classification in indicated and inferred was done “by hand” based on the drill grid. The indicated resources were outlined around 2 areas drilled at a 100 m grid as shown in Figure 14-5. The remaining material was classified as inferred. It is to be noted that the north part of the Buriti zone could get some indicated resources strictly based on drill grid but none of the material is estimated to be above the cut-off grade so the material was put in the inferred category.

Figure 14-5 View of the Block Model with Colors by Classification



14.10 Reasonable Prospects of Eventual Economic Extraction

In order to verify the reasonable prospects of eventual economic extraction on the material 2 steps are taken. The first one is to optimize an open pit on the MRE and the second step is to apply a cut-off grade. The assumptions used for this step include rare earth prices, costs, and technical parameters like the slopes for the pits. The assumptions are listed in Table 14-7.

Given the assumptions used, the total "net smelter return" (NSR) value is given by the following formula:

$$NSR = Nd_2O_3*0.25*0.095 + Pr_6O_{11}*0.25*0.1 + Sm_2O_3*0.25*0.0022 + Tb_4O_7*0.25*1.45 + Dy_2O_3*0.25*0.45 + Eu_2O_3*0.25*0.035 + Gd_2O_3*0.25*0.045 + Ho_2O_3*0.25*0.13 + Er_2O_3*0.25*0.037 + Tm_2O_3*0.25*0.005 + Yb_2O_3*0.25*0.016 + Lu_2O_3*0.25*0.75 + La_2O_3*0.25*0.002 + CeO_2*0.25*0.0015 + Y_2O_3*0.25*0.005 + Sc_2O_3*0.25*0.7 + Co*0.25*0.035$$

When evaluating the NSR value of the blocks for the declaration of the MRE, we find that 92% of the NSR is attributable to the "magnetic rare earth oxides" (MREO;) along with the Scandium and the Cobalt.

As is usually the case for all rare earth projects, we estimated the "basket price" for the project. The basket price comes out at 26.98 US$. The detail for this estimation is presented in Table 14-8. Note that the Scandium and Cobalt are not part of the TREO or the basket price.

The main formulas required to assess this rare earth project are the "total rare earth oxides" (TREO):

$$TREO = Nd_2O_3 + Pr_6O_{11} + Sm_2O_3 + Tb_4O_7 + Dy_2O_3 + Eu_2O_3 + Gd_2O_3 + Ho_2O_3 + Er_2O_3 + Tm_2O_3 + Yb_2O_3 + Lu_2O_3 + La_2O_3 + CeO_2 + Y_2O_3$$

$$MREO = Nd_2O_3 + Pr_6O_{11} + Sm_2O_3 + Tb_4O_7 + Dy_2O_3$$

Table 14-7 List of Assumptions for the Assessment of the Reasonable Prospects of Eventual Economic Extraction

Parameter	Value	Unit
Nd_2O_3	$95	US$ per kg oxide
Pr_6O_{11}	$100	US$ per kg oxide
Sm_2O_3	$2.2	US$ per kg oxide
Tb_4O_7	$1,450	US$ per kg oxide
Dy_2O_3	$450	US$ per kg oxide
Y_2O_3	$5.0	US$ per kg oxide
La_2O_3	$2.0	US$ per kg oxide
CeO_2	$1.5	US$ per kg oxide
Eu_2O_3	$35	US$ per kg oxide
Gd_2O_3	$45	US$ per kg oxide
Ho_2O_3	$130	US$ per kg oxide
Er_2O_3	$37	US$ per kg oxide
Tm_2O_3	$5.0	US$ per kg oxide
Yb_2O_3	$16	US$ per kg oxide
Lu_2O_3	$750	US$ per kg oxide
Scandium	$700	US$ per kg oxide (Sc_2O_3)
Cobalt	$35	US$ per kg metal (Co)
Overall Pit Slope	30	Degrees
In-Pit Mining Cost	$2.1	US$ per tonne mined
Processing Cost and G&A	$9.0	US$ per tonne milled
Metallurgical Recovery (overall)	25	Percent (%)
Mining loss / Dilution (open pit)	5/5	Percent (%) / Percent (%)
Densities	**Value**	**Unit**
Top Soil	2.00	t/m^3
Soil	1.80	t/m^3
Saprolite	2.10	t/m^3
Rock	2.50	t/m^3
Waste in pit	2.00	t/m^3
Cut-off Grade	**Value**	**Unit**
Total NSR (after applying the 25% recovery factor)	10$	US$ per tonne

Table 14-8 Basket Price Estimation Based on Typical Grades Found in the Deposit

Oxide	Grade (ppm)	Value ($/kg)	Percent of TREO	Basket Price ($/kg)	Percent of Basket Price
Sm_2O_3	55	$ 2.20	1.9%	$ 0.04	0.2%
Eu_2O_3	14	$ 35.00	0.5%	$ 0.17	0.6%
Gd_2O_3	40	$ 45.00	1.4%	$ 0.63	2.3%
Tb_4O_7	5	$ 1,450.00	0.2%	$ 2.62	9.7%
Dy_2O_3	28	$ 450.00	1.0%	$ 4.36	16.2%
Ho_2O_3	5	$ 130.00	0.2%	$ 0.22	0.8%
Er_2O_3	12	$ 37.00	0.4%	$ 0.16	0.6%
Tm_2O_3	2	$ 5.00	0.1%	$ 0.003	0.01%
Yb_2O_3	10	$ 16.00	0.3%	$ 0.05	0.2%
Lu_2O_3	1	$ 750.00	0.05%	$ 0.34	1.3%
La_2O_3	739	$ 2.00	26.0%	$ 0.52	1.9%
CeO_2	1292	$ 1.50	45.5%	$ 0.68	2.5%
Pr_6O_{11}	122	$ 100.00	4.3%	$ 4.28	15.8%
Nd_2O_3	378	$ 95.00	13.3%	$ 12.65	46.9%
Y_2O_3	141	$ 5.00	4.9%	$ 0.25	0.9%
TREO Basket Price	2842			$ 26.98	

The open pits have been optimized using GEOVIA's Whittle™ software using the assumptions from Table 14-7. The resulting pits are presented in all figures between Figure 14-6 and Figure 14-10. The overall MRE indicates that, at shallower depths, the N and NW portions are more enriched in TREO in Target IV when compared to Buriti Target. Buriti target presents TREO enrichment at deeper depths and presents anomalous grades of Scandium and Cobalt.

Figure 14-6 Optimized Open Pits with Block Colored by NSR (Very Pale Colors are Outside Pits)

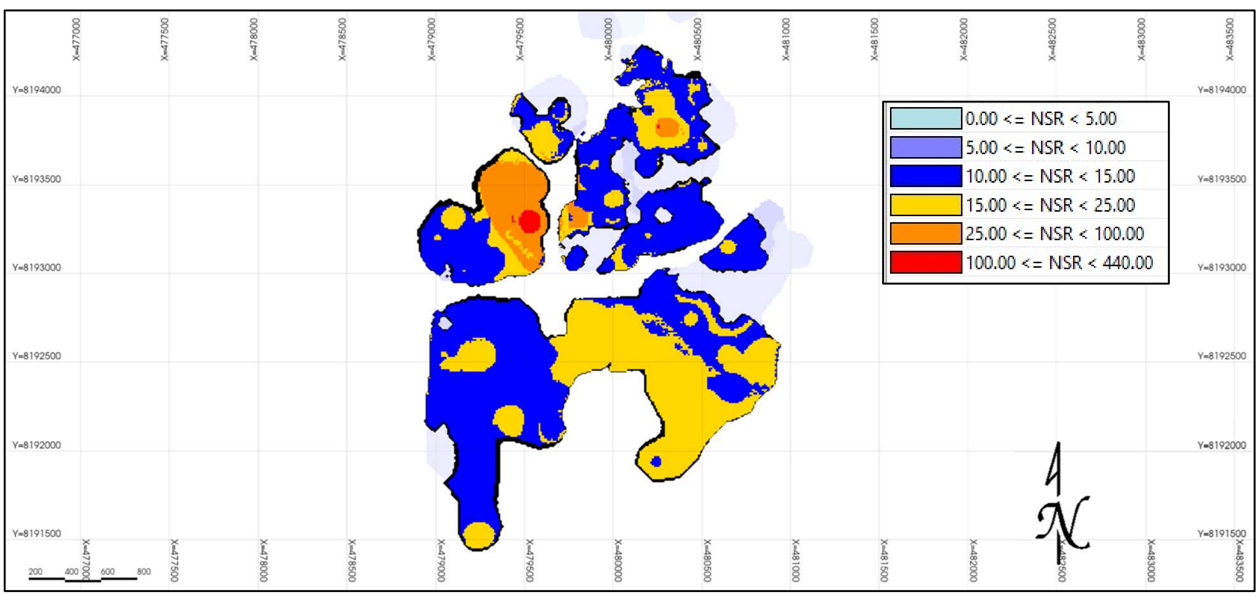


Figure 14-7 South-North Section – Block Model's TREO – 3x Vertical Exaggeration

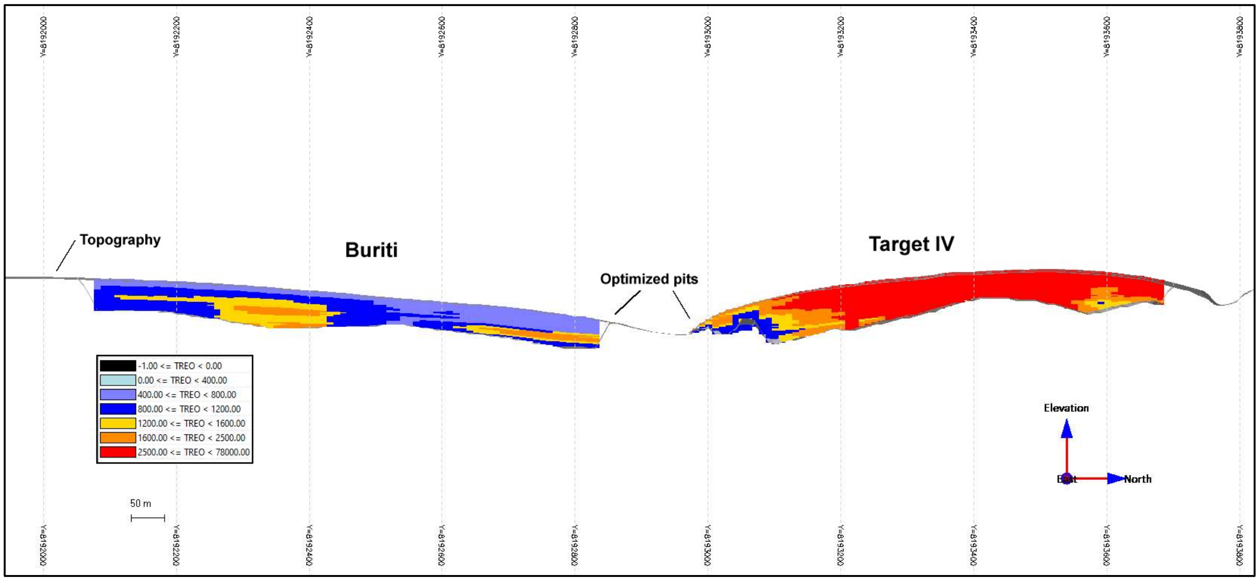


Figure 14-8 3D View from South – Block Model's TREO – 3x Vertical Exaggeration

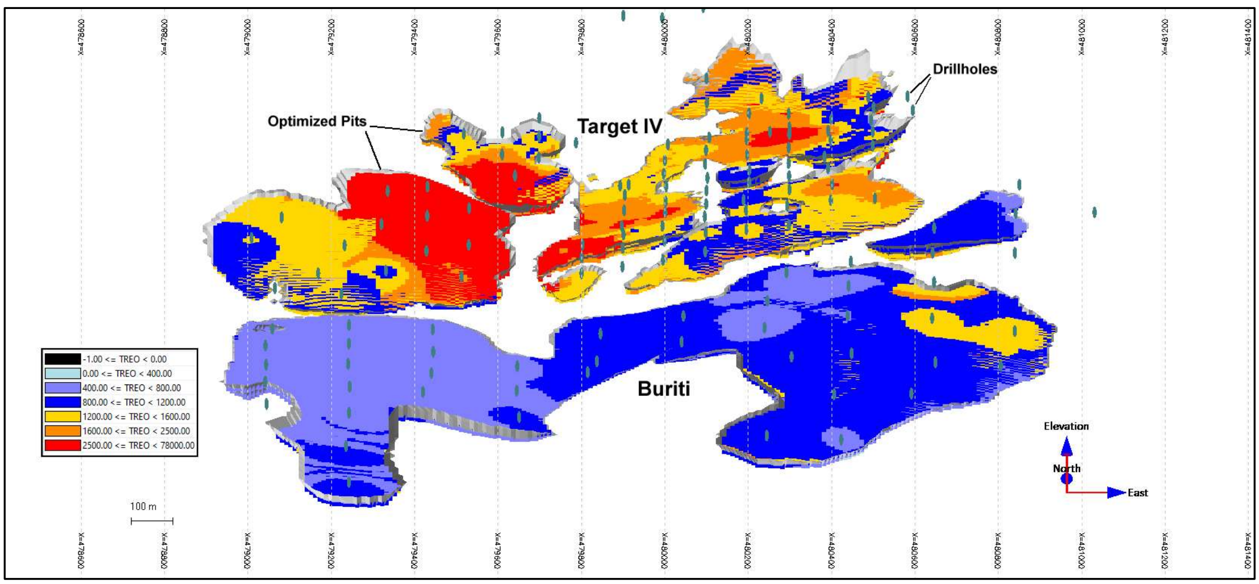


Figure 14-9 South-North Section – Block Model's Sc_2O_3 – 3x Vertical Exaggeration

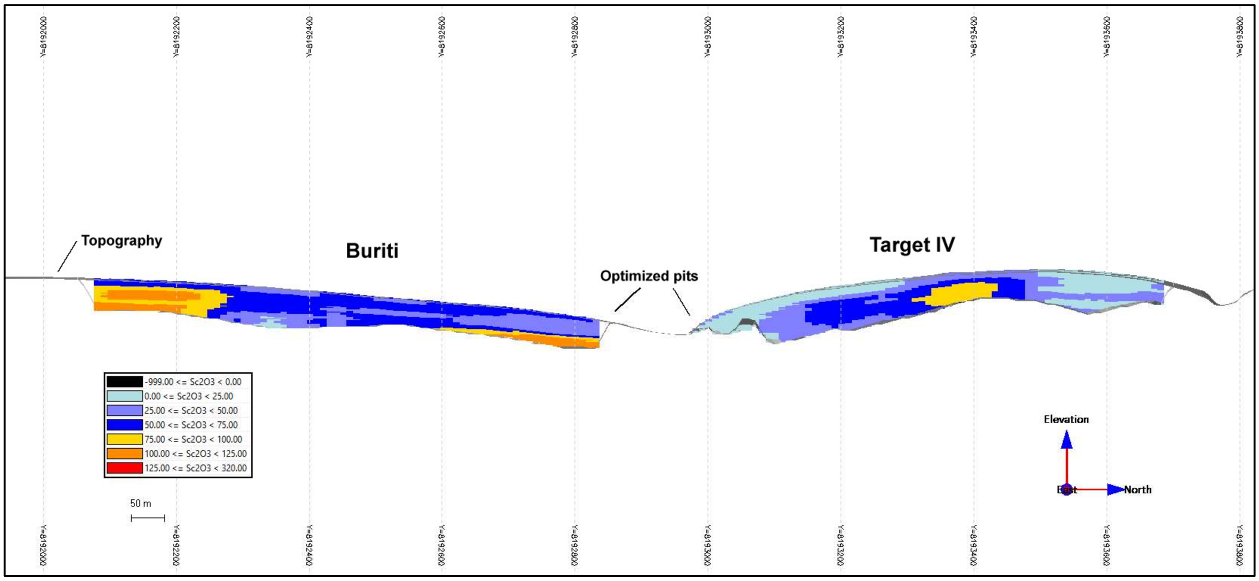
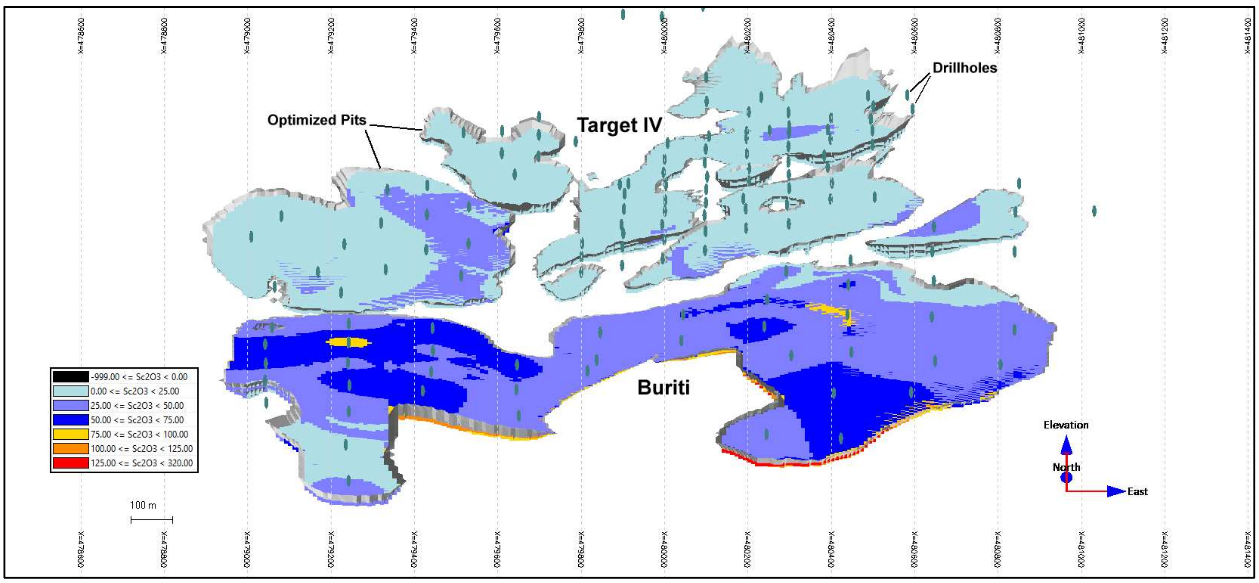


Figure 14-10 3D View from South – Block Model's Sc_2O_3 – 3x Vertical Exaggeration



14.11 Mineral Resource Statement

The base case mineral resource estimation for the PCH project is presented in the Table 14-9. The open pit resource, at a base case cut-off grade of 10 US$/t NSR is estimated at 52.8 million tonnes (Mt) comprising 6.6 Mt Indicated resource with a grade of 2,513 parts per million (ppm) total rare earth oxide (TREO) and 46.2 Mt Inferred resource with a grade of 2,888 ppm TREO.

The detailed grades for each element and the detailed in-situ tonnages for each element are shown in the Table 14-10 and Table 14-11.

Table 14-9 PCH Mineral Resource Estimate (MRE)

Mineralized Zone	Classification	Volume	SG	Tonnes	TREO	MREO	HREO	Sm_2O_3	Tb_4O_7	Dy_2O_3	Pr_6O_{11}	Nd_2O_3	Sc_2O_3	Co
		Mm^3		Mt	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Target IV	Indicated	3.3	1.97	6.6	2513	562	186	58.3	5.8	31.1	109	358	15.9	22
	Inferred	6.9	1.96	13.5	7307	1391	331	114.4	9.6	49.4	311	907	24.6	74
Buriti	Inferred	16.7	1.96	32.7	1059	259	101	29.0	3.1	17.8	45	164	68.6	127
TOTAL	**Indicated**	**3.3**	**1.97**	**6.6**	**2513**	**562**	**186**	**58.3**	**5.8**	**31.1**	**109**	**358**	**15.9**	**22**
	Inferred	**23.6**	**1.96**	**46.2**	**2888**	**591**	**168**	**54.0**	**5.0**	**27.0**	**123**	**381**	**55.7**	**111**

15. The MRE has an effective date of the 1st of February 2024.
16. The Qualified Person for the MRE is Mr. Yann Camus, P.Eng., an employee of SGS.
17. The MRE provided in this table were estimated using current Canadian Institute of Mining, Metallurgy and Petroleum ("CIM") Standards on Mineral Resources and Reserves, Definitions and Guidelines.
18. Mineral Resources that are not Mineral Reserves have not demonstrated economic viability. Additional drilling will be required to convert Inferred and Indicated Mineral Resources to Measured Mineral Resources. There is no certainty that any part of a Mineral Resource will ever be converted into Reserves.
19. All analyses used for the MRE were performed by SGS GEOSOL by ICM40B: Multi Acid Digestion / ICP OES – ICP MS and by IMS95R: Lithium Metaborate Fusion / ICP-MS.
20. MRE are stated at a cut-off total NSR value of 10 US$/t. The full price list and recovery used to estimate the NSR is in Table 14-7. The estimated basket price of TREO is US$26.98.
21. GEOVIA's Whittle™ software was used to provide an optimized pit envelope to demonstrate reasonable prospection for economic extraction. Preliminary pit optimization parameters included overall pit slope of 30 degrees, in-pit mining costs of $2.10, processing and G/A costs of $9/t, and overall mining loss and dilution of 5%. Full details of the preliminary pit-optimization parameters can be found in Table 14-7. The basket price and oxides price list in Table 14-8 are based on forward-looking pricing. These future prices are predicted based on market trends, economic forecasts, and other relevant factors. The actual prices may vary depending on changes in these factors.
22. Figures are rounded to reflect the relative accuracy of the estimate and numbers may not add due to rounding.
23. Resources are presented undiluted and in situ, constrained within a 3D model, and are considered to have reasonable prospects for eventual economic extraction.
24. Bulk density values were determined based on physical test work and assumed porosities for each type of material.
25. Total Rare Earth Oxides: TREO = Y_2O_3 + Eu_2O_3 + Gd_2O_3 + Tb_2O_3 + Dy_2O_3 + Ho_2O_3 + Er_2O_3 + Tm_2O_3 + Yb_2O_3 + Lu_2O_3 + La_2O_3 + Ce_2O_3 + Pr_2O_3 + Nd_2O_3 + Sm_2O_3
26. Magnetic Rare Earth Oxides: MREO = Sm_2O_3 + Tb_4O_7 + Dy_2O_3 + Pr_6O_{11} + Nd_2O_3
27. Heavy Rare Earth Oxides: HREO = Sm_2O_3 + Eu_2O_3 + Gd_2O_3 + Tb_4O_7 + Dy_2O_3 + Ho_2O_3 + Er_2O_3 + Tm_2O_3 + Yb_2O_3 + Lu_2O_3
28. The MRE may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.

Table 14-10 PCH Mineral Resource Estimate (MRE) – Detailed Grades for Each Element

Mineralized Zone	Classification	Tonnes	Sm_2O_3	Eu_2O_3	Gd_2O_3	Tb_4O_7	Dy_2O_3	Ho_2O_3	Er_2O_3	Tm_2O_3	Yb_2O_3	Lu_2O_3	La_2O_3	CeO_2	Pr_6O_{11}	Nd_2O_3	Sc_2O_3	Co	Y_2O_3
		Mt	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Targ. IV	Indic.	6.6	58	14	44	6	31	5	14	1.7	10	1.4	612	1097	109	358	16	22	151
	Infer.	13.5	114	29	77	10	49	9	22	2.8	16	2.1	2060	3436	311	907	25	74	263
Buriti	Infer.	32.7	29	8	23	3.1	18	3.1	8	1.1	7	0.9	217	443	45	164	69	127	88
TOTAL	**Indic.**	**6.6**	58	14	44	6	31	5	14	1.7	10	1.4	612	1097	109	358	16	22	151
	Infer.	**46.2**	54	14	39	5	27	4.7	12	1.6	9	1.3	757	1320	123	381	56	111	139

1. All footnotes from Table 14-9 also apply to this table.

Table 14-11 PCH Mineral Resource Estimate (MRE) – Detailed In-Situ Tonnages for Each Element

Mineralized Zone	Classification	Tonnes	Sm_2O_3	Eu_2O_3	Gd_2O_3	Tb_4O_7	Dy_2O_3	Ho_2O_3	Er_2O_3	Tm_2O_3	Yb_2O_3	Lu_2O_3	La_2O_3	CeO_2	Pr_6O_{11}	Nd_2O_3	Sc_2O_3	Co	Y_2O_3
		Mt	tonnes in-situ	tonnes in-situ	tonnes in-situ	tonnes in-situ	tonnes in-situ	tonnes in-situ	tonnes in-situ	tonnes in-situ	tonnes in-situ	tonnes in-situ	tonnes in-situ	tonnes in-situ	tonnes in-situ	tonnes in-situ	tonnes in-situ	tonnes in-situ	tonnes in-situ
Targ. IV	Indic.	6.6	383	94	292	38	204	34	89	11	68	9	4,013	7,202	718	2,346	105	146	988
	Infer.	13.5	1,548	396	1,042	130	668	116	298	37	217	28	27,877	46,505	4,208	12,270	334	996	3,553
Buriti	Infer.	32.7	947	256	759	103	580	101	269	35	221	31	7,093	14,488	1,487	5,353	2,242	4,154	2,878
TOTAL	**Indic.**	**6.6**	382	94	292	38	204	34	89	11	68	9	4,012	7,199	718	2,345	105	146	987
	Infer.	**46.2**	2,495	652	1,801	233	1,248	217	567	73	438	59	34,971	60,996	5,695	17,623	2,576	5,151	6,432

1. All footnotes from Table 14-9 also apply to this table.

Table 14-12 PCH Mineral Resource Estimate by Layer Type

Classification	Layer	Volume	SG	Tonnes	TREO	MREO	HREO	Sm_2O_3	Tb_4O_7	Dy_2O_3	Pr_6O_{11}	Nd_2O_3	Sc_2O_3	Co
		Mm^3		Mt	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Indicated	Top Soil	0.3	2.00	0.6	1713	323	114	35.0	3.5	19.2	63	203	16.0	22
	Soil	1.3	1.80	2.3	2789	609	206	61.6	6.6	36.2	120	384	15.6	24
	Saprolite	1.7	2.10	3.6	2470	573	186	60.1	5.7	29.8	110	367	16.1	21
Inferred	Top Soil	2.3	2.00	4.6	1073	212	72	22.3	2.2	11.9	40	136	42.8	57
	Soil	10.2	1.80	18.3	2703	561	168	52.2	5.1	27.9	116	360	48.9	128
	Saprolite	11.1	2.10	23.3	3390	688	188	61.6	5.6	29.3	145	446	63.7	109

1. All footnotes from Table 14-9 also apply to this table.

14.12 Model Validation and Sensitivity Analysis

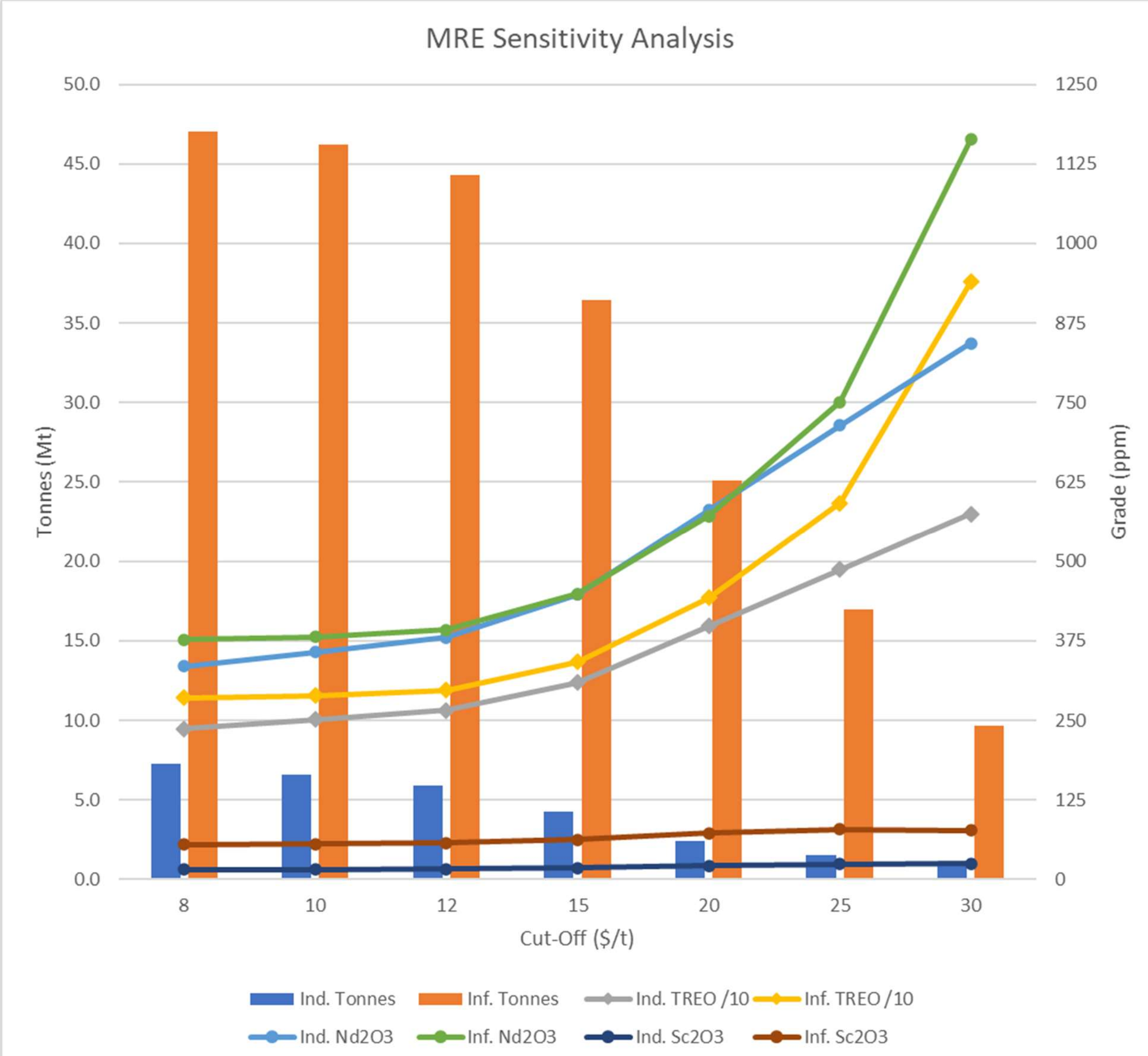
The validation of the model was done by visual inspection of the interpolated grades on section views to confirm that the grades in the block model fits with the grades in the drill holes used for the resource estimation. Also, the blocks were visualized at each step of the MRE process to make sure that every step was controlled and good for publication.

For a sensitivity analysis, the NSR cut-off grade was raised to report the MRE at different grades. The results are also presented in a graph in Figure 14-11.

Table 14-13 Sensitivity Analysis for the PCH MRE

Variable NSR Cut-Off ($/t)	Classification	Tonnes	TREO	MREO	HREO	Sm_2O_3	Tb_4O_7	Dy_2O_3	Pr_6O_{11}	Nd_2O_3	Sc_2O_3	Co
		Mt	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
8 $/t	Indicated	7.2	2370	528	176	54.8	5.5	29.5	103	335	15.4	21
	Inferred	47.0	2852	583	167	53.4	5.0	26.7	122	377	55.1	110
10 $/t (Base Case)	Indicated	6.6	2513	562	186	58.3	5.8	31.1	109	358	15.9	22
	Inferred	46.2	2888	591	168	54.0	5.0	27.0	123	381	55.7	111
12 $/t	Indicated	5.9	2658	598	197	61.9	6.2	32.8	116	380	16.4	23
	Inferred	44.3	2977	608	173	55.4	5.2	27.7	127	393	57.1	115
15 $/t	Indicated	4.2	3093	702	229	72.5	7.2	38.2	137	448	18.5	25
	Inferred	36.4	3418	693	193	62.4	5.8	30.8	146	448	62.6	128
20 $/t	Indicated	2.4	3980	910	293	93.4	9.4	49.0	177	581	21.6	28
	Inferred	25.1	4427	883	235	77.3	7.0	37.1	189	572	72.7	146
25 $/t	Indicated	1.5	4873	1116	352	113.4	11.3	58.6	218	715	23.7	29
	Inferred	16.9	5917	1157	293	98.3	8.7	45.5	253	751	79.1	154
30 $/t	Indicated	1.1	5748	1312	403	132.0	12.8	66.1	258	843	25.0	30
	Inferred	9.6	9397	1786	420	145.5	12.4	63.4	402	1163	77.3	148

Figure 14-11 Sensitivity Analysis Graph for the PCH MRE (Note: TREO is 10x the Graph)



14.13 **Disclaimer**

All relevant data and information regarding the Project are included in other sections of this Technical Report. There is no other relevant data or information available that is necessary to make the technical report understandable and not misleading.

The Authors are not aware of any known mining, processing, metallurgical, environmental, infrastructure, economic, permitting, legal, title, taxation, socio-political, or marketing issues, or any other relevant factors not reported in this technical report, that could materially affect the MRE.

15 MINERAL RESERVE ESTIMATE

There are no Mineral Reserve Estimates for the Property.

16 MINING METHODS

This section does not apply to the Technical Report.

17 RECOVERY METHODS

This section does not apply to the Technical Report.

18 PROJECT INFRASTRUCTURE

This section does not apply to the Technical Report.

19 MARKET STUDIES AND CONTRACTS

This section does not apply to the Technical Report.

20 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT

This section does not apply to the Technical Report.

21 CAPITAL AND OPERATING COSTS

This section does not apply to the Technical Report.

22 ECONOMIC ANALYSIS

This section does not apply to the Technical Report.

23 ADJACENT PROPERTIES

There is no information on properties adjacent to the Property necessary to make the technical report understandable and not misleading.

24 OTHER RELEVANT DATA AND INFORMATION

There is no other relevant data or information available that is necessary to make the technical report understandable and not misleading. To the Authors' knowledge, there are no significant risks and uncertainties that could reasonably be expected to affect the reliability or confidence in the exploration information or MRE.

25 INTERPRETATION AND CONCLUSIONS

SGS Geological Services Inc. ("SGS") was engaged by Appia Rare Earths & Uranium Corp., ("Appia") to conduct an Mineral Resource Estimate ("MRE") for its Ionic Adsorption Clay (IAC) project located in Goiás, Brazil, also known as the Cachoeirinha project or the PCH Project ("PCH" or "Project"). The main goal was to use recent exploration data to the MRE, following guidelines set out in the NI 43-101 Standards of Disclosure for Mineral Projects, and consistent with the current CIM Definition Standards - For Mineral Resources and Mineral Reserves (2014).

The MRE considered all available drilling data up until the effective date of February 1, 2024, and involved a comprehensive assessment of this database, an three-dimensional (3D) grade-controlled wireframe model, review of the classification of the mineral resource estimate (Indicated and Inferred), and review of available written reports.

The MRE has been reported in a manner that takes into account open pit as the possible mining method. The MRE is constrained within an optimized pit envelope using assumptions found in Table 14 7 of this report. The MRE base case table is shown in Table 25-1.

Table 25-1 PCH Mineral Resource Estimate (MRE)

Mineralized Zone	Classification	Volume	SG	Tonnes	TREO	MREO	HREO	Sm_2O_3	Tb_4O_7	Dy_2O_3	Pr_6O_{11}	Nd_2O_3	Sc_2O_3	Co
		Mm^3		Mt	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Target IV	Indicated	3.3	1.97	6.6	2513	562	186	58.3	5.8	31.1	109	358	15.9	22
	Inferred	6.9	1.96	13.5	7307	1391	331	114.4	9.6	49.4	311	907	24.6	74
Buriti	Inferred	16.7	1.96	32.7	1059	259	101	29.0	3.1	17.8	45	164	68.6	127
TOTAL	**Indicated**	**3.3**	**1.97**	**6.6**	**2513**	**562**	**186**	**58.3**	**5.8**	**31.1**	**109**	**358**	**15.9**	**22**
	Inferred	**23.6**	**1.96**	**46.2**	**2888**	**591**	**168**	**54.0**	**5.0**	**27.0**	**123**	**381**	**55.7**	**111**

1. The MRE has an effective date of the 1st of February 2024.
2. The Qualified Person for the MRE is Mr. Yann Camus, P.Eng., an employee of SGS.
3. The MRE provided in this table were estimated using current Canadian Institute of Mining, Metallurgy and Petroleum ("CIM") Standards on Mineral Resources and Reserves, Definitions and Guidelines.
4. Mineral Resources that are not Mineral Reserves have not demonstrated economic viability. Additional drilling will be required to convert Inferred and Indicated Mineral Resources to Measured Mineral Resources. There is no certainty that any part of a Mineral Resource will ever be converted into Reserves.
5. All analyses used for the MRE were performed by SGS GEOSOL by ICM40B: Multi Acid Digestion / ICP OES – ICP MS and by IMS95R: Lithium Metaborate Fusion / ICP-MS.
6. MRE are stated at a cut-off total NSR value of 10 US$/t. The full price list and recovery used to estimate the NSR is in Table 14-7. The estimated basket price of TREO is US$26.98.
7. GEOVIA's Whittle™ software was used to provide an optimized pit envelope to demonstrate reasonable prospection for economic extraction. Preliminary pit optimization parameters included overall pit slope of 30 degrees, in-pit mining costs of $2.10, processing and G/A costs of $9/t, and overall mining loss and dilution of 5%. Full details of the preliminary pit-optimization parameters can be found in Table 14-7. The basket price and oxides price list in Table 14-8 are based on forward-looking pricing. These future prices are predicted based on market trends, economic forecasts, and other relevant factors. The actual prices may vary depending on changes in these factors.
8. Figures are rounded to reflect the relative accuracy of the estimate and numbers may not add due to rounding.
9. Resources are presented undiluted and in situ, constrained within a 3D model, and are considered to have reasonable prospects for eventual economic extraction.
10. Bulk density values were determined based on physical test work and assumed porosities for each type of material.
11. Total Rare Earth Oxides: TREO = Y_2O_3 + Eu_2O_3 + Gd_2O_3 + Tb_2O_3 + Dy_2O_3 + Ho_2O_3 + Er_2O_3 + Tm_2O_3 + Yb_2O_3 + Lu_2O_3 + La_2O_3 + Ce_2O_3 + Pr_2O_3 + Nd_2O_3 + Sm_2O_3
12. Magnetic Rare Earth Oxides: MREO = Sm_2O_3 + Tb_4O_7 + Dy_2O_3 + Pr_6O_{11} + Nd_2O_3
13. Heavy Rare Earth Oxides: HREO = Sm_2O_3 + Eu_2O_3 + Gd_2O_3 + Tb_4O_7 + Dy_2O_3 + Ho_2O_3 + Er_2O_3 + Tm_2O_3 + Yb_2O_3 + Lu_2O_3
14. The MRE may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.

All geological data has been reviewed and verified by SGS as being accurate to the extent possible. SGS considers that the assay sampling and extensive QA/QC sampling of core by Appia provides adequate verification of the data and is of sufficient quality to be used for the current resource estimate.

Given the current knowledge on the property, there is a high potential for an ionic clay REE deposit.

25.1 Drilling

Appia drilled a total of 3,255.8 meters in a total of 290 holes on the Property. A total of 243.5 meters was drilled in one diamond drill hole (PCH-DD-001). The diamond drill hole tested a strong magnetic anomaly at depth within the alkali breccia zone. A total of 993.3 meters was drilled in 142 Auger holes (PCH-AH-001 to PCH-AH-140 and PCH-AH-TT1 to PCH-AH-TT3). The Auger holes have a final depth of 2.0 to 13.0 meters. A total of 2,019.0 meters in 147 Reverse Circulation (RC) drill holes (PCH-RC-001 to PCH-RC-147). The RC holes were drilled vertically and have a final depth of 2 to 33 meters.

The weathered profile along the diamond drill hole PCH-DDH-001 extended to approximately 20 meters of true thickness yielding concentrations of 5,548 ppm or 0.55% Total Rare Earth Oxide (TREO), 1,420 ppm or 0.14% Magnet Rare Earth Oxide (MREO). The results confirm the ultra-high-grade nature of the upper levels, including concentrations reaching up to 22,339 ppm or 2.23% TREO, 6,204 ppm or 0.62% MREO, and 2,074 ppm or 0.21% Heavy Rare Earth Oxide (HREO) across 2 metres from a depth of 2 m to 4 m.

Two auger holes returned a total weighted average of 10,249 ppm or 1.02% TREO, including:

- PCH-AH-29 from 0 to 7m EOH: 4,122 ppm or 0.41% TREO, 1,066 ppm or 0.11% MREO, 361 ppm or 0.04% HREO, and 3,762 ppm or 0.38% Light Rare Earth Oxides (LREO).
- PCH-AH-30 from 0 to 7m EOH: 16,375 ppm or 1.64% TREO, 2,955 ppm or 0.30% MREO, 457 ppm or 0.05% HREO, and 15,918 ppm or 1.59% Light Rare Earth Oxides (LREO).

Drill hole PCH-RC-063 was sent for further analyses by SGS Geosl Labs, using method IMS95RS. The updated assays reveal a very significant 42.2% increase in Total Rare Earth Oxides (TREO) and a notable 9.2% increase in Magnet Rare Earth Oxides (MREO). Of particular significance is the high-grade 2 meter (m) intercept from 10 m to 12 m, showing 92,758 ppm (Parts Per Million) or 9.28% TREO, with 13,798 ppm or 1.38% MREO, and 2,241 ppm or 0.22% Heavy Rare Earth Oxide (HREO), and 90,516 ppm or 9.05% Light Rare Earth Oxide (LREO).

25.2 Risks and Opportunities

Approximately 46.2 Mt of the estimated resource at the reported cut-off grade for the current Mineral Resource is in the Inferred Mineral Resource classification. The Inferred Resource is based on limited information and although it is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated or Measured Mineral Resources with further exploration, it is not guaranteed.

There is an opportunity on the Project to extend known mineralization along strike on the Property. There is an opportunity to push the exploration efforts towards resource growth. Continued exploration and drilling of the Deposit with a focus on extending the known limits of the deposit may potentially increase the resource base.

The PCH project shows a regolith profile reminiscent of the rare earth ionic adsorption clay-style deposits. These deposits are formed through the intense weathering of granitic rocks, usually in subtropical climates where high rates of weathering can occur. The rare earth elements are leached from the parent rock and absorbed onto the surfaces of clay minerals within the soil. This adsorption is made possible by the highly ionic nature of these elements, which allows them to be readily taken up and held by the clay.

Most aspects of the project are well defined. The risks are grouped by licensing, markets and social/environmental categories. One of the most significant risks identified for the Project is related to REE markets.

26 RECOMMENDATIONS

The Authors consider that the PCH project contains a significant open pit Mineral Resource associated with a well-defined rare earth element and Scandium mineralized trend. The current Mineral Resource Estimate has shown that the Deposit can likely be mined by conventional open pit mining methods.

The Authors consider the Property to have significant potential for delineation of additional Mineral Resources and that further exploration is warranted. Given the current knowledge on the property, there is a high potential for an ionic clay REE deposit. It is SGS recommendation to continue to explore the Deposit, with a focus on extending the limits of known mineralization along strike, as well as infill drill the existing deposit in order to convert portions of Inferred mineral resources into Indicated or Measured.

Given the prospective nature of the Property, it is the Authors' opinion that the Property merits further exploration and that a proposed plan for further work is justified. A proposed work program by SGS will help advance the Deposit towards a pre-development stage and will provide key inputs required to evaluate the economic viability of a mining project at a preliminary economic assessment (PEA) level.

SGS recommends Appia conducts further exploration, subject to funding and any other matters which may cause the proposed exploration program to be altered. For the upcoming period, a total of 3,000 m of drilling is proposed to continue expanding mineral resources and upgrading existing Inferred resources as well as exploring the deposit.

The Authors also recommend a comprehensive metallurgical testing on the top soil, soil and saprolite zones to confirm the capability of the weather zone to be process by heap leach and recover the HREE and LREE with low impact on the environment and local communities. REE deportment studies will detail the ration between the REE in the weather soil profile and the primary mineral. It is advisable to conduct a comprehensive survey employing leaching assays to verify both the presence and assess the recoverable grades of desorbed Rare Earth Elements (REE).

The total cost of the recommended work program is estimated at $1,430,000 (Table 26-1).

Table 26-1 Recommended 2024 Work Program for the PCH Project

Item	Cost in CAD
Resource Expansion Drilling and Resource Classification improvement (3,000 m)	$450,000
Assays / Geochemistry	$120,000
Additional Metallurgical Testing (deportment studies, leach test)	$300,000
Mineralogical Testing	$80,000
Updated Resource Estimate	$80,000
Preliminary Economic Assessment (PEA) Study and Related Studies	$400,000
Total:	**$1,430,000**

27 REFERENCES

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28 DATE AND SIGNATURE PAGE

This report titled “Technical Report on the Maiden Mineral Resource Estimate for the PCH project, state of Goiàs, Brazil” dated April 15, 2024 (the “Technical Report”) for Appia was prepared and signed by the following authors:

The effective date of the report is February 1, 2024
The date of the report is April 15, 2024.

Signed by:

"Original Signed and Sealed"

Qualified Person
Yann Camus, P.Eng.,
April 15, 2024

Company
SGS Canada Inc. (“SGS”)

Signed by:

"Original Signed and Sealed"

Qualified Person
Marc-Antoine Laporte, P.Geo., M.Sc.
April 15, 2024

Company
SGS Canada Inc. (“SGS”)

Signed by:

"Original Signed and Sealed"

Qualified Person
Sarah Dean, P.Geo.
April 15, 2024

Company
SGS Canada Inc. (“SGS”)

29 CERTIFICATES OF QUALIFIED PERSONS

QP CERTIFICATE – YANN CAMUS

To accompany the report titled **"Technical Report on the Maiden Mineral Resource Estimate for the PCH Project, Goiàs, Brazil"** with an effective date of February 1, 2024 (the "Technical Report") prepared for Appia Rare Earths & Uranium Corp. (the "Company").

I, Yann Camus, P. Eng. of Val-Morin, hereby certify that:

1. I am a Mineral Resource Estimation Engineer for SGS Canada Inc, - SGS Geological Services with an office at 10 Boul. de la Seigneurie Est, Suite 203, Blainville Quebec Canada, J7C 3V5. (www.geostat.com).
2. I am a graduate of the École Polytechnique de Montréal (B.Sc. Geological Engineer, in 2000). I am a member of good standing, No. 125443, of the l'Ordre des Ingénieurs du Québec (Order of Engineers of Quebec). My relevant experience includes continuous mineral resource estimation since my graduation from university including many gold projects.
3. I have not personally inspected the subject property.
4. This certificate applies to the Technical Report entitled "Technical Report on the Maiden Mineral Resource Estimate for the PCH Project, Goiàs, Brazil" with an effective date of 1st February 2024.
5. I have read the definition of qualified person set out in National Instrument 43-101 and certify that by virtue of my education, affiliation to a professional association, and past relevant work experience, I fulfill the requirements to be a qualified person for the purposes of National Instrument 43-101.
6. I have read the NI 43-101 and I am an author of this report and responsible for sections 13 to 24, 27, 28, and applicable parts of 1, 12, 25, 26 and 29, each of which has been prepared in accordance with NI 43-101. I have reviewed these sections and accept professional responsibility for these sections of this technical report.
7. I am independent of Appia Rare Earths & Uranium Corp. as defined in Section 1.5 of National Instrument 43-101.
8. I have no prior involvement on the Property.
9. As at the effective date of the technical report, to the best of my knowledge, information and belief, this technical report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.
10. I have read National Instrument 43-101, Form 43-101F1 and confirm that this technical report has been prepared in accordance therewith.

Signed and dated this 15 day of April 2024 at Val-Morin, Quebec.

"Original Signed and Sealed"

Yann Camus, P.Eng., SGS Canada Inc.

QP CERTIFICATE – MARC-ANTOINE LAPORTE

To accompany the report titled **“Technical Report on the Maiden Mineral Resource Estimate for the PCH Project, Goiàs, Brazil”** with an effective date of February 1, 2024 (the “Technical Report”) prepared for Appia Rare Earths & Uranium Corp. (the “Company”).

I, Marc-Antoine Laporte, P.Geo., M.Sc., of Québec, Québec, do hereby certify:

1. I am a senior geologist with SGS Canada Inc (Geological Services) with a business address at 125 rue Fortin, Suite 100, Quebec City, Quebec, G1M 3M2.
2. I am a graduate of Université Laval (2004 and 2008) in Earth Sciences. I am a member in good standing of Ordre des Géologues du Québec (#1347). I have worked as a geologist continuously since my graduation.
3. I have visited the Project site on November 9 to 12, 2023.
4. This certificate applies to the Technical Report entitled “Technical Report on the Maiden Mineral Resource Estimate for the PCH Project, Goiàs, Brazil” with an effective date of 1st February 2024.
5. I have read the definition of Qualified Person set out in the National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association and past relevant work experiences, I fulfil the requirement to be an independent qualified person for the purposes of NI 43-101.
6. I have read the NI 43-101 and I have participated in the preparation of this Technical Report and am responsible for Sections 2 and 12.2, and applicable parts of 1, 25, 26 and 29, each of which has been prepared in accordance with NI 43-101. I have reviewed these sections and accept professional responsibility for these sections of this technical report.
7. I am independent of Appia Rare Earths & Uranium Corp. as defined by Section 1.5 of the Instrument.
8. I don’t have any prior involvement with the property that is the subject of the technical report.
9. As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the sections of the technical report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the technical report not misleading.
10. I have read National Instrument 43-101, Form 43-101F1 and confirm that this technical report has been prepared in accordance therewith.

Signed and dated this 15 day of April 2024 in Quebec City, Quebec.

"Original Signed and Sealed"

Marc-Antoine Laporte, P.Geo, M.Sc. SGS Canada Inc.

QP CERTIFICATE – SARAH DEAN

To accompany the report titled **"Technical Report on the Maiden Mineral Resource Estimate for the PCH Project, Goiàs, Brazil"** with an effective date of February 1, 2024 (the "Technical Report") prepared for Appia Rare Earths & Uranium Corp. (the "Company").

I, Sarah A. Dean, B.Sc. P.Geo. of 771 County Road 31, Belle River, Ontario, hereby certify that:

1. I am a Project Geologist with SGS Canada Inc, 10 Boul. de la Seigneurie Est, Suite 203, Blainville Quebec, J7C 3V5, Canada.
2. I am a graduate from Laurentian University, Sudbury, Ontario having obtained the degree of Bachelor of Science in Geology in 2006 and a graduate of the Australian Institute of Business, Adelaide, South Australia having obtained the degree of Master of Business Administration. I am a member in good standing of the Ordre des Géologues du Québec and use the title of Professional Geologist (géo. or P.Geo.) (Licence No. #2150, 2018) and Professional Geologists of Ontario (Licence No. #2951, 2018). I have been employed as a geologist from January 2006 to January 2012 and from May 2016 to present.
3. I have been involved in mineral exploration and resource modeling at the greenfield to advanced exploration stages, including at producing mines, in Canada and Australia since 2006. I have experience in gold deposits, Athabasca Oil Sands, SEDEX deposits, iron ore, lithium, and carbon. I am aware of the different methods of estimation and the geostatistics applied to metallic, non-metallic and industrial mineral projects.
4. This certificate applies to the Technical Report entitled "Technical Report on the Maiden Mineral Resource Estimate for the PCH Project, Goiàs, Brazil" with an effective date of 1st February 2024.
5. I have read the definition of "qualified person" set out in the National Instrument 43-101 and certify that by reason of my education, affiliation with a professional association and past relevant work experience, I fulfil the requirements to be an independent qualified person for the purposes of NI 43-101.
6. I have read the NI 43-101 and I am an author of this report and responsible for sections 3 to 11, and applicable parts of 1 and 29, each of which has been prepared in accordance with NI 43-101. I have reviewed these sections and accept professional responsibility for these sections of this Technical Report.
7. I am independent of the Company as defined in Section 1.5 of National Instrument 43-101.
8. I have had no prior involvement with the PCH Property.
9. As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.
10. I have read NI 43-101 and Form 43-101F1 (the "Form"), and the Technical Report has been prepared in compliance with NI 43-101 and the Form.

Signed and dated this April 15, 2024, at Belle River, Ontario.

"Original Signed and Sealed"

Sarah Dean, P.Geo., SGS Canada Inc

APPENDIX A

Summary of Drill Hole Location Data

Hole Name	X	Y	Z	Azimuth	Dip	Length	Type
PCH-DD-001	480250	8193820	653	108	-63	243.5	DDH
PCH-RC-001	480397.3	8193914	652.2	0	-90	15	RC
PCH-RC-002	480485.9	8193999	661	0	-90	15	RC
PCH-RC-003	480498.8	8193914	662.4	0	-90	11	RC
PCH-RC-004	480580.3	8193914	671.7	0	-90	10	RC
PCH-RC-005	480492.7	8193822	662.3	0	-90	15	RC
PCH-RC-006	480592.8	8193833	669.8	0	-90	15	RC
PCH-RC-007	480496.5	8193713	666	0	-90	14	RC
PCH-RC-008	480396	8193715	658.6	0	-90	18	RC
PCH-RC-009	480389.8	8193795	657	0	-90	15	RC
PCH-RC-010	480294.9	8193715	652.3	0	-90	12	RC
PCH-RC-011	480296.4	8193814	651.8	0	-90	15	RC
PCH-RC-012	480195.3	8193714	646.2	0	-90	11	RC
PCH-RC-013	480094.6	8193715	638.4	0	-90	14	RC
PCH-RC-014	479995.6	8193716	630	0	-90	12	RC
PCH-RC-015	480296.8	8193916	645.1	0	-90	13	RC
PCH-RC-016	480194.5	8193816	646.9	0	-90	9	RC
PCH-RC-017	479890.6	8193712	620.2	0	-90	9	RC
PCH-RC-018	479911.2	8193700	622.6	0	-90	18	RC
PCH-RC-019	479998	8193813	629.4	0	-90	7	RC
PCH-RC-020	480096.8	8193812	638.3	0	-90	9	RC
PCH-RC-021	480194.8	8193909	641.1	0	-90	18	RC
PCH-RC-022	479696.7	8194009	641.8	0	-90	16	RC
PCH-RC-023	479696.5	8193914	637.9	0	-90	15	RC
PCH-RC-024	479695.7	8193819	631.1	0	-90	10	RC
PCH-RC-025	479784.9	8193910	632.6	0	-90	16	RC
PCH-RC-026	480187	8193386	647.7	0	-90	21	RC
PCH-RC-027	480296.8	8193416	652.9	0	-90	15	RC
PCH-RC-028	480296.1	8193513	652.7	0	-90	14	RC
PCH-RC-029	480200.3	8193511	647.6	0	-90	16	RC
PCH-RC-030	480294.9	8193612	651.6	0	-90	15	RC
PCH-RC-031	480389.1	8193519	658.5	0	-90	14	RC
PCH-RC-032	480496.6	8193612	666.4	0	-90	12	RC
PCH-RC-033	480381	8193609	657.3	0	-90	15	RC
PCH-RC-034	480200.6	8193613	645.8	0	-90	13	RC
PCH-RC-035	480097.2	8193409	641.5	0	-90	5	RC
PCH-RC-036	479998.8	8193413	633.9	0	-90	5	RC
PCH-RC-037	479999.6	8193512	631.1	0	-90	9	RC
PCH-RC-038	480000.9	8193613	631.8	0	-90	10	RC
PCH-RC-039	479902	8193613	624.3	0	-90	27	RC
PCH-RC-040	479900.4	8193510	623.8	0	-90	15	RC
PCH-RC-041	480100.2	8193613	638.8	0	-90	11	RC
PCH-RC-042	480098	8193511	640.5	0	-90	11	RC
PCH-RC-043	479894.5	8193398	624.2	0	-90	13	RC
PCH-RC-044	479899	8193317	626.7	0	-90	11	RC
PCH-RC-045	479992.2	8193316	634.1	0	-90	12	RC
PCH-RC-046	479997.4	8193216	633.5	0	-90	9	RC
PCH-RC-047	480096.3	8193219	640.3	0	-90	10	RC
PCH-RC-048	480093.7	8193320	641.6	0	-90	7	RC
PCH-RC-049	480192.8	8193319	647.2	0	-90	9	RC

Hole Name	X	Y	Z	Azimuth	Dip	Length	Type
PCH-RC-050	480291.3	8193316	651.3	0	-90	11	RC
PCH-RC-051	480399.4	8193412	658	0	-90	11	RC
PCH-RC-052	480396.2	8193311	656.5	0	-90	12	RC
PCH-RC-053	480502	8193304	659	0	-90	5	RC
PCH-RC-054	479993.8	8193110	630.1	0	-90	3	RC
PCH-RC-055	480094.9	8193120	636.1	0	-90	11	RC
PCH-RC-056	480229.7	8194130	643.8	0	-90	11	RC
PCH-RC-057	480098.8	8194113	642.2	0	-90	4	RC
PCH-RC-058	480097.8	8194191	653.2	0	-90	3	RC
PCH-RC-059	480199.9	8194013	645.3	0	-90	12	RC
PCH-RC-060	480295	8194008	645.4	0	-90	5	RC
PCH-RC-061	480104.6	8193912	637	0	-90	5	RC
PCH-RC-062	480005.4	8193909	631.5	0	-90	4	RC
PCH-RC-063	479527.8	8193285	621.7	0	-90	24	RC
PCH-RC-064	479528.6	8193491	628	0	-90	16	RC
PCH-RC-065	479428.8	8193589	634.5	0	-90	22	RC
PCH-RC-066	479333.4	8193488	642.9	0	-90	13	RC
PCH-RC-067	479428.1	8193381	634.7	0	-90	11	RC
PCH-RC-068	479318	8193289	638.9	0	-90	33	RC
PCH-RC-069	479426.2	8193190	628.2	0	-90	21	RC
PCH-RC-070	479510	8193095	617.7	0	-90	18	RC
PCH-RC-071	479328.9	8193084	624.2	0	-90	29	RC
PCH-RC-072	479515.6	8193916	639.7	0	-90	27	RC
PCH-RC-073	479800.3	8193312	618.7	0	-90	15	RC
PCH-RC-074	479798.7	8193214	619.4	0	-90	17	RC
PCH-RC-075	479798.1	8193113	618.3	0	-90	11	RC
PCH-RC-076	479896.1	8193113	624.1	0	-90	10	RC
PCH-RC-077	479897	8193223	626.7	0	-90	18	RC
PCH-RC-078	479608.4	8193918	640.6	0	-90	12	RC
PCH-RC-079	479607.6	8193820	633.8	0	-90	15	RC
PCH-RC-080	479638.5	8193726	627	0	-90	27	RC
PCH-RC-081	479897.6	8194606	700.4	0	-90	17	RC
PCH-RC-082	479898.9	8194511	691.1	0	-90	10	RC
PCH-RC-083	479898.5	8194413	679.7	0	-90	7	RC
PCH-RC-084	479991.7	8194410	678	0	-90	21	RC
PCH-RC-085	479995.4	8194613	702.4	0	-90	15	RC
PCH-RC-086	479993.8	8194515	691.6	0	-90	12	RC
PCH-RC-087	480083.7	8194619	703.9	0	-90	2	RC
PCH-RC-088	480194.2	8194604	703.7	0	-90	8	RC
PCH-RC-089	480094	8194498	689.6	0	-90	15	RC
PCH-RC-090	480089.9	8194430	685.1	0	-90	7	RC
PCH-RC-091	480383.9	8194511	704.4	0	-90	7	RC
PCH-RC-092	480384.1	8194603	711.4	0	-90	9	RC
PCH-RC-093	480444.2	8192940	649.4	0	-90	22	RC
PCH-RC-094	480640.3	8192936	657.4	0	-90	20	RC
PCH-RC-095	480643.9	8192742	655.9	0	-90	21	RC
PCH-RC-096	480438.6	8192745	652.3	0	-90	14	RC
PCH-RC-097	480436.3	8192545	651.1	0	-90	15	RC
PCH-RC-098	480237.1	8192544	641.3	0	-90	17	RC
PCH-RC-099	480243.9	8192743	639.8	0	-90	18	RC

Hole Name	X	Y	Z	Azimuth	Dip	Length	Type
PCH-RC-100	480042.6	8192748	626.6	0	-90	14	RC
PCH-RC-101	480038.3	8192549	628.6	0	-90	3	RC
PCH-RC-102	480644	8193140	653.6	0	-90	12	RC
PCH-RC-103	480848.4	8193331	667.3	0	-90	6	RC
PCH-RC-104	480839.6	8193152	664.9	0	-90	7	RC
PCH-RC-105	480837.6	8192944	656.3	0	-90	4	RC
PCH-RC-106	481028.7	8193131	668	0	-90	6	RC
PCH-RC-107	480289.6	8192923	642.3	0	-90	8	RC
PCH-RC-108	479812.8	8192532	604.9	0	-90	10	RC
PCH-RC-109	479843.5	8192741	612.3	0	-90	14	RC
PCH-RC-110	479835.2	8192566	610	0	-90	20	RC
PCH-RC-111	479642.6	8192337	612.7	0	-90	14	RC
PCH-RC-112	479644	8192538	609.3	0	-90	13	RC
PCH-RC-113	479241.9	8192138	640.4	0	-90	23	RC
PCH-RC-114	479039.8	8192152	643	0	-90	10	RC
PCH-RC-115	479041.6	8192340	634.5	0	-90	22	RC
PCH-RC-116	479238.3	8192342	635	0	-90	24	RC
PCH-RC-117	479438	8192339	627.5	0	-90	21	RC
PCH-RC-118	479442.5	8192539	621.4	0	-90	14	RC
PCH-RC-119	479441.2	8192739	616.1	0	-90	18	RC
PCH-RC-120	479240.6	8192739	619.8	0	-90	21	RC
PCH-RC-121	479240.1	8192540	628.1	0	-90	14	RC
PCH-RC-122	479417.9	8192173	631.6	0	-90	15	RC
PCH-RC-123	479040.2	8192542	626.4	0	-90	15	RC
PCH-RC-124	479056.6	8192706	620.6	0	-90	15	RC
PCH-RC-125	479042.8	8191942	649.5	0	-90	8	RC
PCH-RC-126	479233.5	8191732	639.2	0	-90	18	RC
PCH-RC-127	479240.7	8191940	642.2	0	-90	18	RC
PCH-RC-128	479648.5	8192137	614.6	0	-90	14	RC
PCH-RC-129	479240.3	8191540	631.89	0	-90	11	RC
PCH-RC-130	480639	8192547	649	0	-90	12	RC
PCH-RC-131	480837.3	8192543	638.4	0	-90	9	RC
PCH-RC-132	480803.7	8192372	629.8	0	-90	10	RC
PCH-RC-133	480646.9	8192341	636.5	0	-90	11	RC
PCH-RC-134	480445.9	8192341	644	0	-90	12	RC
PCH-RC-135	480301.9	8192341	641.1	0	-90	14	RC
PCH-RC-136	480403.9	8192154	631.8	0	-90	11	RC
PCH-RC-137	480589.5	8192192	627.9	0	-90	13	RC
PCH-RC-138	480242.4	8191938	623	0	-90	13	RC
PCH-RC-139	480421	8191965	616.2	0	-90	12	RC
PCH-RC-140	479166.6	8193070	623.7	0	-90	30	RC
PCH-RC-141	479222.1	8192993	615.6	0	-90	23	RC
PCH-RC-142	479230	8193179	634.3	0	-90	21	RC
PCH-RC-143	479078.8	8193286	645	0	-90	21	RC
PCH-RC-144	479006.9	8193200	637.9	0	-90	20	RC
PCH-RC-145	479062.7	8193025	616.5	0	-90	22	RC
PCH-RC-146	480193.7	8193216	643.3	0	-90	7	RC
PCH-RC-147	480295.9	8193213	647.3	0	-90	22	RC
PCH-AH-001	480244	8194566	702.8264	0	-90	4.5	AH
PCH-AH-002	480016	8194565	697.1031	0	-90	6.5	AH

Hole Name	X	Y	Z	Azimuth	Dip	Length	Type
PCH-AH-003	480473	8194566	715.9476	0	-90	8.5	AH
PCH-AH-004	480119	8194739	715.7476	0	-90	8.8	AH
PCH-AH-005	480321	8194715	720.3648	0	-90	8.8	AH
PCH-AH-006	480099	8194439	686.2137	0	-90	5.5	AH
PCH-AH-007	479463	8193880	637.9714	0	-90	10	AH
PCH-AH-008	479381	8194181	662.8286	0	-90	7	AH
PCH-AH-009	479759	8194147	649.2824	0	-90	7	AH
PCH-AH-010	479375	8194656	674.8546	0	-90	8	AH
PCH-AH-011	479733	8194630	704.6563	0	-90	5.7	AH
PCH-AH-012	478969	8193818	660.8702	0	-90	5	AH
PCH-AH-013	480598	8192703	655.6876	0	-90	13	AH
PCH-AH-014	480960	8192695	641.075	0	-90	7	AH
PCH-AH-015	480851	8193058	660.8379	0	-90	8	AH
PCH-AH-016	480200	8192683	637.5936	0	-90	6	AH
PCH-AH-017	479902	8192679	617.5106	0	-90	7	AH
PCH-AH-018	480027	8192276	622.7569	0	-90	9	AH
PCH-AH-019	480418	8192308	642.6306	0	-90	6.5	AH
PCH-AH-020	480604	8191505	620.9506	0	-90	9	AH
PCH-AH-021	480857	8191659	634.2773	0	-90	5	AH
PCH-AH-022	480597	8191777	616.7014	0	-90	6	AH
PCH-AH-023	480329	8191556	609.8449	0	-90	8	AH
PCH-AH-024	480065	8191776	609.3951	0	-90	6	AH
PCH-AH-025	479647	8191799	620.1113	0	-90	8	AH
PCH-AH-026	479240	8191809	640.8521	0	-90	10	AH
PCH-AH-027	479036	8192251	638.6593	0	-90	8	AH
PCH-AH-028	479401	8192663	620.2703	0	-90	8	AH
PCH-AH-029	479194	8193117	628.434	0	-90	7	AH
PCH-AH-030	479375	8193391	638.6694	0	-90	7	AH
PCH-AH-031	478972	8193417	653.6726	0	-90	8	AH
PCH-AH-032	479213	8192415	633.0314	0	-90	10	AH
PCH-AH-033	479067	8192606	624.79	0	-90	7	AH
PCH-AH-034	478658	8193000	635.9136	0	-90	8	AH
PCH-AH-035	478572	8193402	655	0	-90	3.5	AH
PCH-AH-036	487839	8192966	653	0	-90	10	AH
PCH-AH-037	487762	8192399	625	0	-90	7	AH
PCH-AH-038	484562	8193690	659	0	-90	10	AH
PCH-AH-039	485250	8192934	622	0	-90	6	AH
PCH-AH-040	488633	8194464	662	0	-90	8	AH
PCH-AH-041	488587	8193823	673	0	-90	5	AH
PCH-AH-042	487091	8193786	632	0	-90	8	AH
PCH-AH-043	486540	8193791	621	0	-90	7	AH
PCH-AH-044	485757	8194521	636	0	-90	7	AH
PCH-AH-045	486669	8193068	625	0	-90	6	AH
PCH-AH-046	479077	8191532	636.6683	0	-90	9	AH
PCH-AH-047	478961	8191148	655	0	-90	9	AH
PCH-AH-048	478650	8191165	668	0	-90	4	AH
PCH-AH-049	479341	8191172	629	0	-90	9	AH
PCH-AH-050	478528	8190702	650	0	-90	10	AH
PCH-AH-051	479456	8190779	628	0	-90	7	AH
PCH-AH-052	478188	8189963	657	0	-90	9	AH

Hole Name	X	Y	Z	Azimuth	Dip	Length	Type
PCH-AH-053	478996	8189892	624	0	-90	7	AH
PCH-AH-054	478592	8189160	662	0	-90	8	AH
PCH-AH-055	479444	8189127	615	0	-90	8	AH
PCH-AH-056	479958	8188355	606	0	-90	6	AH
PCH-AH-057	479106	8188783	631	0	-90	9	AH
PCH-AH-058	479443	8187128	618	0	-90	7	AH
PCH-AH-059	480386	8187550	613	0	-90	9	AH
PCH-AH-060	480183	8193382	647.4302	0	-90	7	AH
PCH-AH-061	480297	8193610	651.7275	0	-90	8	AH
PCH-AH-062	480496	8193712	665.8715	0	-90	9	AH
PCH-AH-063	480495	8193607	666.1748	0	-90	8	AH
PCH-AH-064	480196	8193813	646.9879	0	-90	4.5	AH
PCH-AH-065	479892	8193394	624.0656	0	-90	5	AH
PCH-AH-066	480097	8193217	640.3905	0	-90	2	AH
PCH-AH-067	480005	8193608	632.1261	0	-90	5.5	AH
PCH-AH-068	480091	8193709	638.0961	0	-90	5.5	AH
PCH-AH-069	479424	8193186	628.1132	0	-90	9	AH
PCH-AH-070	479529	8193284	621.4291	0	-90	7	AH
PCH-AH-071	479345	8190335	617	0	-90	7	AH
PCH-AH-072	479113	8190804	643	0	-90	8	AH
PCH-AH-073	478554	8189958	637	0	-90	8	AH
PCH-AH-074	478128	8190257	645	0	-90	4	AH
PCH-AH-075	478973	8189523	648	0	-90	10	AH
PCH-AH-076	478571	8189452	654	0	-90	8	AH
PCH-AH-077	479330	8189604	632	0	-90	7	AH
PCH-AH-078	478217	8189158	657	0	-90	8	AH
PCH-AH-079	478152	8190687	666	0	-90	7	AH
PCH-AH-080	478941	8190379	628	0	-90	7	AH
PCH-AH-081	479293	8194288	666.6186	0	-90	7	AH
PCH-AH-082	479295	8194119	662.2556	0	-90	7	AH
PCH-AH-083	479506	8194284	669.2444	0	-90	7	AH
PCH-AH-084	479508	8194057	650.3055	0	-90	5	AH
PCH-AH-085	479706	8194197	656.5837	0	-90	6	AH
PCH-AH-086	479732	8194503	701.0413	0	-90	7	AH
PCH-AH-087	479242	8194516	664.4019	0	-90	8	AH
PCH-AH-088	487558	8193166	638	0	-90	10	AH
PCH-AH-089	487981	8193155	645	0	-90	6	AH
PCH-AH-090	487589	8192681	638	0	-90	10	AH
PCH-AH-091	488017	8192660	645	0	-90	8	AH
PCH-AH-092	488127	8193847	653	0	-90	9	AH
PCH-AH-093	487544	8194045	624	0	-90	8	AH
PCH-AH-094	488310	8194177	656	0	-90	8	AH
PCH-AH-095	487923	8194497	634	0	-90	7	AH
PCH-AH-096	488284	8193534	660	0	-90	8	AH
PCH-AH-097	487724	8193629	639	0	-90	7	AH
PCH-AH-098	487329	8192409	623	0	-90	10	AH
PCH-AH-099	486848	8194096	615	0	-90	6	AH
PCH-AH-101	487716	8191563	634	0	-90	6	AH
PCH-AH-102	487887	8189433	648	0	-90	8	AH
PCH-AH-103	487113	8190231	667	0	-90	9	AH

Hole Name	X	Y	Z	Azimuth	Dip	Length	Type
PCH-AH-104	485645	8189742	633	0	-90	9	AH
PCH-AH-105	486702	8191652	631	0	-90	10	AH
PCH-AH-106	486423	8189428	639	0	-90	8	AH
PCH-AH-107	490526	8193018	799	0	-90	6	AH
PCH-AH-108	478982	8188499	649	0	-90	4	AH
PCH-AH-109	479430	8188794	630	0	-90	10	AH
PCH-AH-110	479164	8189014	621	0	-90	8	AH
PCH-AH-111	478484	8194811	661	0	-90	4	AH
PCH-AH-112	478163	8194530	634	0	-90	4	AH
PCH-AH-113	477805	8194746	629	0	-90	7	AH
PCH-AH-114	479337	8195447	694	0	-90	6	AH
PCH-AH-115	479126	8195277	681	0	-90	5	AH
PCH-AH-116	478734	8195050	666	0	-90	3	AH
PCH-AH-117	477576	8194744	614	0	-90	2	AH
PCH-AH-118	477359	8193775	635	0	-90	6	AH
PCH-AH-119	477489	8194128	650	0	-90	7	AH
PCH-AH-120	477363	8193543	645	0	-90	4.5	AH
PCH-AH-121	477591	8193400	650	0	-90	5	AH
PCH-AH-122	478744	8192502	624.7127	0	-90	7	AH
PCH-AH-123	478674	8192296	640.0738	0	-90	6	AH
PCH-AH-124	478303	8192579	655	0	-90	4	AH
PCH-AH-125	477935	8192905	643	0	-90	8	AH
PCH-AH-126	478309	8193025	650	0	-90	6	AH
PCH-AH-127	477479	8193040	657	0	-90	5	AH
PCH-AH-128	477015	8192851	720	0	-90	6	AH
PCH-AH-129	476837	8192538	723	0	-90	4	AH
PCH-AH-130	477007	8192255	739	0	-90	3	AH
PCH-AH-131	476870	8191919	718	0	-90	7	AH
PCH-AH-132	477054	8191408	429	0	-90	5	AH
PCH-AH-133	478774	8191719	663.7962	0	-90	6.5	AH
PCH-AH-134	478135	8191376	662	0	-90	6	AH
PCH-AH-135	478289	8191360	696	0	-90	8	AH
PCH-AH-136	477843	8191408	728	0	-90	4	AH
PCH-AH-137	477721	8191630	743	0	-90	3	AH
PCH-AH-138	477512	8191697	758	0	-90	5.5	AH
PCH-AH-139	477460	8191488	754	0	-90	6	AH
PCH-AH-140	478377	8191792	741	0	-90	7	AH
PCH-AH-TT1	479531	8193160	617.8999	0	-90	7	AH
PCH-AH-TT2	479592	8193359	619.9333	0	-90	7	AH
PCH-AH-TT3	480292	8193731	652.3078	0	-90	7	AH

APPENDIX B

Metallurgical Sample Assay – Actlabs (Historic)

Final Report

Report Number: A22-02683

Report Date: 6/5/2022

Composite Sample for Metallurgical Test at ActLabs - Assay Results

Analyte Symbol	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Y	Th	U	TREE	TREE+Y	Sc	Nb
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm			ppm	ppm
Detection Limit	0.1	0.1	0.05	0.1	0.1	0.05	0.1	0.1	0.1	0.1	0.1	0.05	0.1	0.04	2	0.1	0.1			1	1
Analysis Method	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-ICP	FUS-MS	FUS-MS			FUS-ICP	FUS-MS
Sample	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Y	Th	U	TREE	TREE+Y	Sc	Nb
PCH-TD-39-6.00-7.00MT	65.3	125	16.5	72.7	14.7	4.37	12.4	1.8	9.6	1.7	4.6	0.6	3.8	0.58	41	7.7	3	333.65	374.65	199	88
PCH-TD-40-8.00-9.00MT	58.3	163	15.4	67.6	14.3	4.09	12.2	1.7	9.6	1.7	4.5	0.57	3.6	0.54	46	5.2	2.2	357.1	403.1	118	257
PCH-TD-39-5.00-6.00MT	63.2	174	17	75	15.3	4.45	13.1	2	11.5	2.1	6	0.8	5.1	0.8	55	7.8	3.4	390.35	445.35	204	120
PCH-TD-39-7.00-8.00MT	76.8	159	19.1	80.2	16.8	4.93	13.5	2	10.4	1.8	4.4	0.58	3.5	0.53	39	6.8	2.5	393.54	432.54	177	81
PCH-F03-114	91.1	173	19.3	79	12.6	3.54	10.2	1.3	7	1.2	3.6	0.5	3.4	0.52	37	37.2	15.6	406.26	443.26	59	268
PCH-F03-112	89.1	205	17.9	63.1	11	3.08	8.2	1.3	7.2	1.3	3.7	0.54	3.8	0.61	37	24.3	8.8	415.83	452.83	25	326
PCH-TD-40-9.00-10.00MT	78.5	147	22	107	20.6	5.94	18.4	2.5	13.8	2.5	6.9	0.86	5.1	0.76	74	4.9	2.3	431.86	505.86	117	191
PCH-F03-111	79.1	248	16.2	60.7	11.7	3.23	8.9	1.4	8.1	1.5	4.1	0.63	4.3	0.69	51	31	10.7	448.55	499.55	30	393
PCH-TD-40-7.00-8.00MT	95	153	23.5	106	19.8	5.81	18.4	2.5	14.2	2.6	7.4	0.93	5.6	0.82	74	9.9	3.1	455.56	529.56	109	275
PCH-TD-40-6.00-7.00MT	101	142	27.5	119	24.6	6.88	20.6	3	16.5	3	7.8	1.02	6	0.9	83	6	1.9	479.8	562.8	166	147
PCH-TD-39-4.00-5.00MT	87.8	219	22.8	91.6	18.9	5.47	17.3	2.7	15.5	2.9	7.9	1.09	7	1.05	78	12.6	5.6	501.01	579.01	156	153
PCH-TD-39-0.00-1.00MT	116	267	21.5	81.3	13	3.47	9.4	1.3	7.1	1.2	3.3	0.47	3.1	0.47	30	29.2	9.4	528.61	558.61	89	166
PCH-TR09-0.5m_1m	90.4	140	21.8	91.2	18.6	5.72	26.6	6.1	48.5	11.2	38.5	5.74	35.5	5.02	396	49.8	5.2	544.88	940.88	48	540
PCH-F03-115	141	254	23.6	82.9	13.7	3.72	10.5	1.5	8.1	1.5	4.1	0.64	4	0.65	44	64.4	20.4	549.91	593.91	64	321
PCH-TD-39-1.00-2.00MT	120	308	21.8	75.4	13	3.44	8.8	1.3	6.9	1.2	3.1	0.45	2.9	0.45	23	31.8	10	566.74	589.74	89	304
PCH-F03-113	140	246	27.1	102	16.7	4.26	12.1	1.7	9.3	1.6	4.6	0.64	4.7	0.79	42	26.9	5.4	571.49	613.49	16	328
PCH-TD-40-0.00-1.00MT	125	300	22.6	85.4	14.1	3.86	10.7	1.5	8.6	1.5	4.3	0.59	3.8	0.57	35	37.2	9.6	582.52	617.52	120	147
PCH-TD-39-8.00-9.00MT	184	170	31.3	122	22.6	6.48	18.2	2.4	12.6	2.2	5.5	0.71	4.4	0.7	57	9.9	3.4	583.09	640.09	152	125
PCH-F03-107	148	172	27.2	97.9	18.4	5.23	21.8	4.3	36.1	12.1	40.2	5.52	28.7	4.22	645	101	40.4	621.67	1266.67	10	473
PCH-TD-39-9.00-10.00MT	146	148	41.6	181	36.9	10.7	29.5	3.9	20.2	3.4	8.1	1.04	6.2	0.94	87	5.7	2.4	637.48	724.48	167	54
PCH-F03-110	146	325	26.6	90.6	16.9	4.72	13.2	2.1	11.6	2	5.4	0.78	5.4	0.82	66	69.6	20.2	651.12	717.12	17	373
PCH-TD-40-4.00-5.00MT	145	260	31	122	24	6.79	20.3	3.2	18.4	3.3	8.9	1.23	7.4	1.07	92	16	5	652.59	744.59	182	174
PCH-TD-39-2.00-3.00MT	161	337	27.5	93.5	16	4.17	11	1.5	8.2	1.4	3.8	0.52	3.5	0.54	30	31	10.2	669.63	699.63	97	303
PCH-TD-39-3.00-4.00MT	158	281	32.8	131	22.2	6.02	17.8	2.5	13.6	2.4	6.8	0.92	5.8	0.94	63	23.6	9.1	681.78	744.78	117	179
PCH-TD-40-5.00-6.00MT	116	333	29.8	129	24.3	7.12	21.1	3.1	17.8	3.2	9.1	1.19	7.1	1.03	85	15	4	702.84	787.84	165	157
PCH-TD-38-0.00-1.00MT	162	320	33.4	136	23.1	6.1	17.7	2.5	12.9	2.2	6.1	0.77	4.8	0.71	53	36.9	6.8	728.28	781.28	66	231
PCH-F03-108	184	276	34.3	131	22.3	6.17	20.9	3.4	23.8	6.1	20.8	2.74	15.4	2.17	269	129	34.1	749.08	1018.08	20	517
PCH-TD-38-1.00-2.00MT	167	340	34.2	135	22.5	6.09	17.7	2.4	12.9	2.1	5.7	0.74	4.6	0.7	51	39	7	751.63	802.63	69	173
PCH-TD-38-4.00-5.00MT	176	333	42.4	181	31.3	8.77	25.6	3.4	17.9	3	7.4	0.9	5.2	0.76	77	17.4	3	836.63	913.63	47	104
PCH-TD-38-3.00-4.00MT	212	402	49.8	206	38.7	10.4	31.2	4.3	23.4	4	9.7	1.25	7.2	0.99	104	25.5	4.1	1000.94	1104.94	56	142
PCH-TD-38-2.00-3.00MT	232	452	48	192	31.7	8.68	24.8	3.4	17.9	3	7.9	1	6.3	0.96	74	38.5	7.5	1029.64	1103.64	71	149
PCH-F03-106	283	383	40.1	146	24.8	7.45	34.4	6.1	49	14.9	51.7	6.86	36.8	5.03	772	125	51.4	1089.14	1861.14	14	655
PCH-TD-38-5.00-6.00MT	219	456	54.3	227	42.7	11.6	32.4	4.4	22.5	3.7	8.9	1.08	6.2	0.88	93	12.7	2.5	1090.66	1183.66	44	93
PCH-TR09-1m_1.5	103	148	23.9	99.2	26.6	11.6	77.1	23	204	50.1	176	27.1	170	23.5	1751	153	11.4	1163.1	2914.1	68	930
PCH-TR09-1.5m_2m	182	309	41.4	174	41.7	11.9	57.3	13.4	109	25.4	88.5	13.7	86.3	12.1	884	168	12.9	1165.7	2049.7	54	391
PCH-TD-38-7.00-8.00MT	365	510	51.3	189	29.6	8.12	24	3.3	17.4	2.8	7.3	0.84	4.9	0.67	74	26.5	4.8	1214.23	1288.23	37	108
PCH-F03-109	296	553	55.4	208	35.1	9.44	27.8	4.1	22.1	3.9	10.5	1.45	9.4	1.53	125	161	22.5	1237.72	1362.72	17	588
PCH-F03-102	308	582	51.9	176	32.3	8.79	24	4	24.1	4.4	12.6	1.94	13.1	1.98	109	92.4	27.5	1245.11	1354.11	35	320
PCH-F03-101	310	606	54.8	195	35.8	9.8	27.3	4.3	24.9	4.6	12.8	1.89	12.5	1.85	126	63.1	18.5	1301.54	1427.54	39	167
PCH-TD-38-6.00-7.00MT	399	589	67.6	272	46.9	13	38	5.1	26.3	4.3	10.6	1.24	6.5	0.89	106	32.8	4.9	1480.43	1586.43	43	112
PCH-TD-46-7.00-8.00MT	625	952	129	518	71.2	19.2	52	6.3	31.5	5.6	15.4	2.01	12	1.88	161	51.7	6.3	2441.09	2602.09	37	225
PCH-TD-46-6.00-7.00MT	660	946	137	517	77.3	20.2	51	6.5	33.4	5.8	15	1.95	11.6	1.77	162	34.4	5.2	2484.52	2646.52	29	167
PCH-F03-105	1250	964	66	191	33.6	10.7	42.8	7.3	48	10.1	29.3	4.18	24.7	3.79	323	451	50.2	2685.47	3008.47	16	1170
PCH-F03-103	1170	1190	136	456	65.4	16.2	44.3	6.6	37	6.3	18.3	2.54	16.4	2.31	153	566	48	3167.35	3320.35	23	375
PCH-TD-23-0.00-1.00MT	987	2150	188	701	109	28.1	80.3	10	49.5	7.9	18.6	2.03	11	1.55	195	103	12.6	4343.98	4538.98	13	161

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Final Report

Report Number: A22-02683

Report Date: 6/5/2022

Composite Sample for Metallurgical Test at ActLabs - Assay Results

Analyte Symbol

Analyte Symbol	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Y	Th	U	TREE	TREE+Y	Sc	Nb
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm			ppm	ppm
Detection Limit	0.1	0.1	0.05	0.1	0.1	0.05	0.1	0.1	0.1	0.1	0.1	0.05	0.1	0.04	2	0.1	0.1			1	1
Analysis Method	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-ICP	FUS-MS	FUS-MS			FUS-ICP	FUS-MS
PCH-F03-104	1970	1660	124	392	69.3	21	64.4	9.4	53.2	9.4	26.5	3.56	22.5	3.25	243	1040	35	4428.51	4671.51	17	388
PCH-TD-23-1.00-2.00MT	1010	2710	195	730	115	30.2	84.1	11	54.2	8.6	20	2.17	11.2	1.59	211	126	15.4	4983.06	5194.06	18	182
PCH-F01-01	1280	2960	243	883	130	35.1	93.3	13.2	69.7	11.8	30	3.42	16.7	2.03	300	106	37.6	5771.25	6071.25	45	1170
PCH-TD-18-6.00-6.30MT	1450	2560	327	1320	219	61.1	155	18.3	84.2	12.4	27.4	2.75	13.7	1.9	298	236	39.1	6252.75	6550.75	9	2580
PCH-TD-18-4.00-5.00MT	1910	3720	385	1440	203	51.8	121	13.9	59.7	8.4	18.6	1.99	10.5	1.55	173	231	21.5	7945.44	8118.44	17	1490
PCH-TD-46-4.00-5.00MT	2640	4040	382	1280	148	34.9	82.3	9.4	41.8	6.4	16.3	1.96	11.6	1.7	155	85.8	10.6	8696.36	8851.36	49	233
PCH-TD-46-5.00-6.00MT	2970	4340	443	1570	179	42.8	103	11.6	53.6	8.4	22.4	2.73	16.6	2.37	219	97.7	10.9	9765.5	9984.5	62	203
PCH-TD-23-4.00-5.00MT	2700	4300	510	1840	301	80.4	222	29.1	148	24.2	52.8	5.34	25.9	3.62	660	167	17.2	10242.36	10902.36	33	165
PCH-F01-06	2700	4760	552	2030	317	89.8	239	37	210	38.7	96.8	11.2	52.6	6.05	1114	191	97.8	11140.15	12254.15	18	2650
PCH-TR03-1.5m_2m	2780	5150	557	2100	308	85.1	222	31.5	173	29.5	74.2	7.96	36.1	4.06	741	185	53.2	11558.42	12299.42	43	1200
PCH-TD-23-3.00-4.00MT	3450	4260	626	2450	380	104	303	38.6	192	31.2	71.1	6.95	32.1	4.29	861	192	18.9	11949.24	12810.24	39	173
PCH-TD-18-5.00-6.00MT	2990	5180	620	2350	356	96.6	237	27.1	118	16.3	34.8	3.31	16.6	2.18	367	345	29.6	12047.89	12414.89	16	3800
PCH-F01-07	2910	5480	578	2060	315	88.3	224	35.8	203	37.6	93.7	10.3	46	5.06	1048	197	103	12086.76	13134.76	21	2910
PCH-F01-02	2930	5850	555	2020	291	77.8	199	28	148	24.2	60.2	6.57	30.3	3.43	584	208	58.5	12223.5	12807.5	45	1340
PCH-F01-05	3600	6450	730	2900	430	123	345	49	266	47.3	124	13.7	63.9	7.32	1335	285	120	15149.22	16484.22	16	3620
PCH-F01-04	3980	7310	835	3340	522	147	410	58.4	308	53.7	138	15.1	69.4	7.97	1460	372	114	17194.57	18654.57	22	3990
PCH-F01-03	4470	7790	886	3200	510	136	344	51.6	274	46.6	112	12.5	58.5	6.74	1166	347	89.2	17897.94	19063.94	35	2050
PCH-TD-23-2.00-3.00MT	4440	8150	889	3400	525	139	352	43.6	201	29.8	64.9	6.12	27.6	3.42	728	348	24.9	18271.44	18999.44	22	165
PCH-TR03-1m_1.5m	4850	8340	1000	3690	589	160	407	63.2	333	57	135	15	66.9	7.4	1478	347	73.4	19713.5	21191.5	38	2090
PCH-TR03-0m_0.5m	6200	11200	1260	4630	727	203	533	83.7	469	84.4	205	22.1	96.1	10.9	2330	504	86	25724.2	28054.2	23	2650
PCH-TR03-0.5m_1m	6420	11100	1310	4880	785	217	569	88.1	498	86.5	208	22.3	97.6	10.7	2317	482	88.2	26292.2	28609.2	28	2820
Average	**1193.36**	**2048.79**	**226.50**	**847.91**	**131.99**	**36.12**	**97.63**	**14.15**	**77.50**	**13.83**	**35.93**	**4.27**	**22.14**	**2.87**	**390.30**	**137.63**	**25.74**	**4753.01**	**5143.31**	62	**736.212**

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